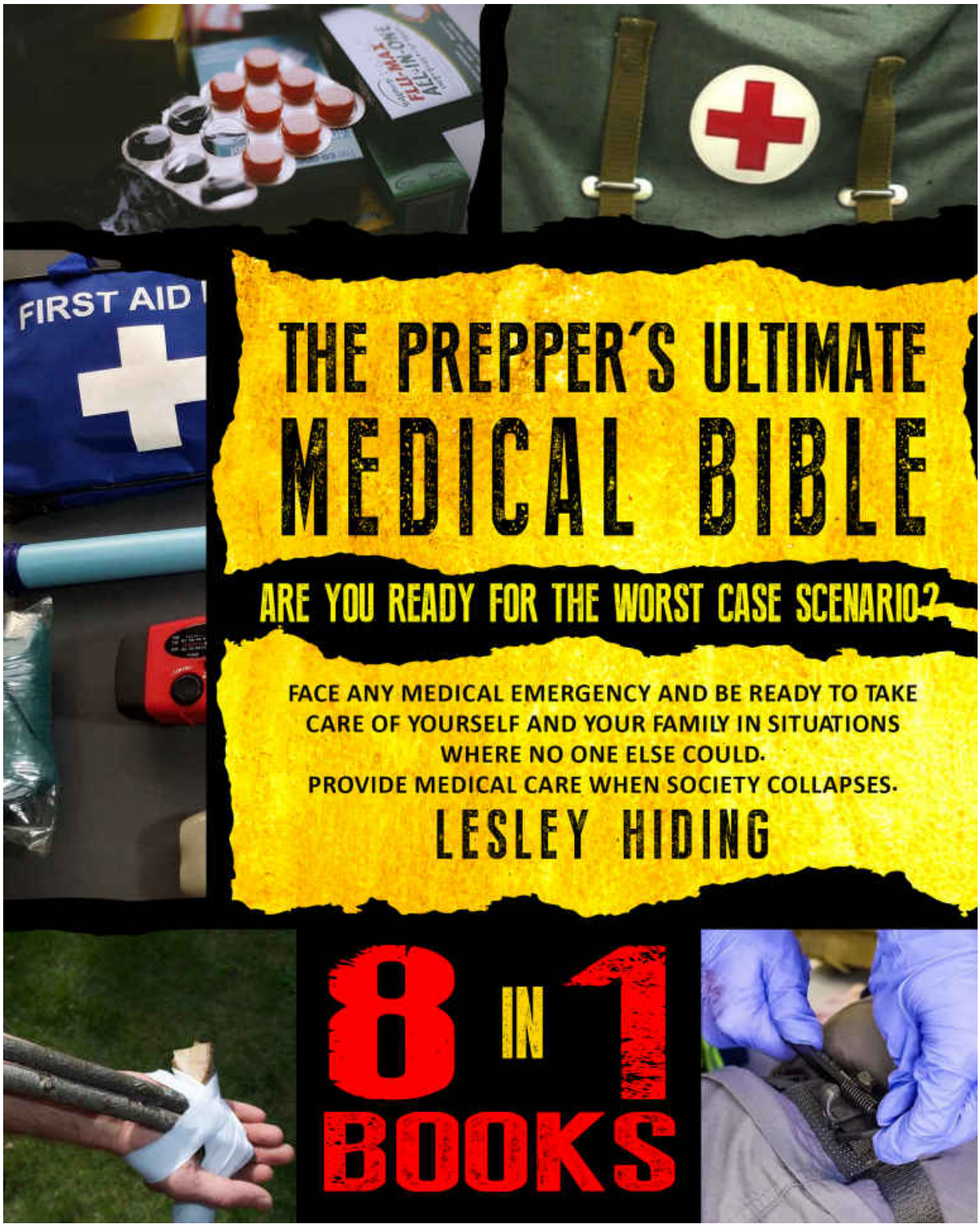
THE PREPPER'S ULTIMATE MEDICAL BIBLE

ARE YOU READY FOR THE WORST CASE SCENARIO?

FACE ANY MEDICAL EMERGENCY AND BE READY TO TAKE CARE OF YOURSELF AND YOUR FAMILY IN SITUATIONS WHERE NO ONE ELSE COULD.
PROVIDE MEDICAL CARE WHEN SOCIETY COLLAPSES.

LESLEY HIDING

8 IN 1 BOOKS



THE PREPPER'S ULTIMATE MEDICAL BIBLE

FACE ANY MEDICAL EMERGENCY AND BE READY TO TAKE CARE OF YOURSELF AND YOUR FAMILY IN SITUATIONS WHERE NO ONE ELSE COULD

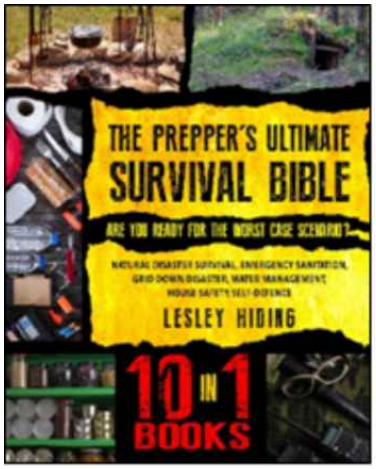
PROVIDE MEDICAL CARE WHEN SOCIETY COLLAPSES

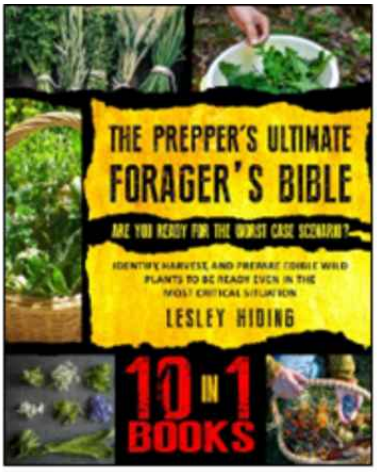
LESLEY HIDING

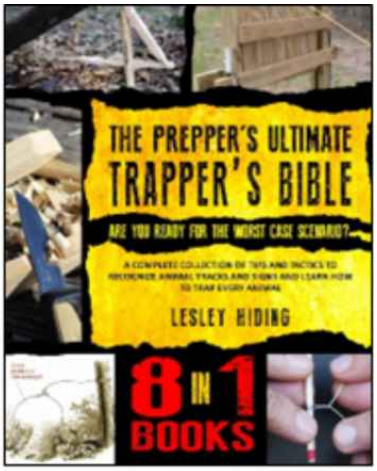
TABLE OF CONTENTS

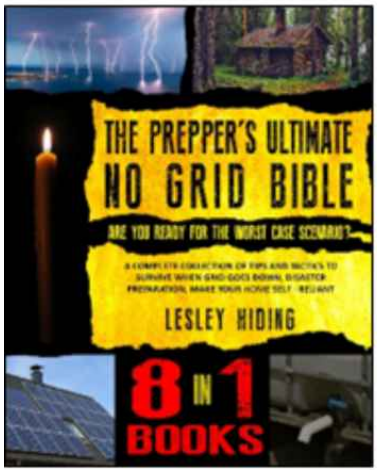
THE PREPPER'S ULTIMATE BIBLES SERIES

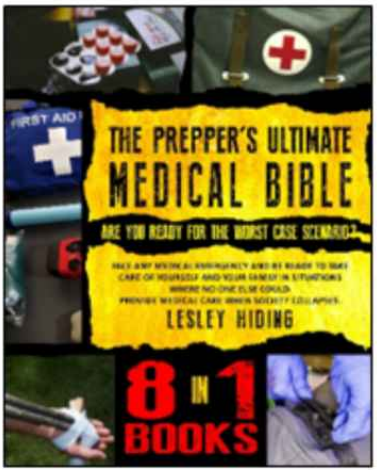
The Prepper's Ultimate Bibles Series has been designed to ensure that everyone can be ready to face any catastrophic situation they may find themselves in.
The Prepper's Ultimate Medical is the fifth book in the series and allows you to go into the details of the survival practices in medical emergencies.

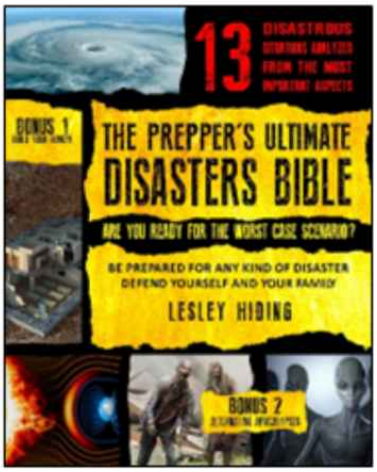












INTRODUCTION

This book is primarily concerned with medical readiness—being able to treat illnesses and wounds in difficult circumstances. To exist, a person needs access to food, water, and shelter. The first things on the agenda will be a full belly and shelter from the elements. So, what comes next on the list?

After surviving a catastrophe, it is important to continue to stay healthy and prevent that in the absence of organized health facilities, a simple infection can put our lives at risk.

What could we do instead if someone has already been injured and needs medical care?

In this guide we are going to address this very eventuality, trying to give you as much knowledge as possible about what could happen to you and your family, so that you are alerted and ready in time of need.

BOOK 1

SURVIVAL MEDICINE

CHAPTER 1

PRINCIPLES OF MEDICAL PREPAREDNESS

Many prepared people believe that in the event of a societal collapse, personal and house defense should come first, followed by gathering food and constructing a shelter. Defending oneself is crucial, but have you considered protecting your health?

Your health is at risk in the same way that the survivors in the most recent zombie apocalypse film are in a circumstance where electricity may be out, and conventional techniques of purifying water and preparing meals are unavailable. It would be difficult to keep things clean and infectious diseases would probably spread like wildfire. Cutting wood is one of the everyday tasks that frequently results in cuts that could become infected. These mild conditions, which modern medical science makes so simple to cure, can quickly become life-threatening in an emergency.

You might be a skilled outdoor enthusiast with access to plenty of food and defensive gear. However, what would you say to a member of your family who gets sick or hurt in a harsh environment? The challenges of a grid-down situation will undoubtedly endanger the health of your complete family or group. Having the knowledge and tools necessary to treat injuries and diseases is crucial.

There will probably be a lot more diarrheal illness in a collapse than there were gunfights at the OK corral. History reminds us that more people died from dysentery during the Civil War than from gunshot wounds.

Educating yourself on medical conditions and how to properly store medical supplies is a real first step toward guaranteeing your family's survival in difficult times. If the unexpected occurs, it is more likely that there will be medical supplies on hand, and the information you acquire will be useful for the rest of your life. Numerous medical products have a long shelf life; this is one of the characteristics that will inspire trust in you as you proceed. Not to mention their worth as barter commodities in difficult times.

We also urge you to learn about natural treatments and complementary therapies that might be useful for various problems. We cannot attest to every promise that a certain item will make you feel better. It will be enough to suggest that your family might find it beneficial to create a medicinal garden of their own. Our family has one. It is not necessary to have a green thumb to grow many medicinal herbs because they are hardy and thrive in less-than-ideal environments for most plants. Many of them can survive even without direct sunlight.

It's crucial to realize that some diseases will be challenging to treat without access to modern medical facilities. There won't be many heart bypass surgeries. Thus it will be difficult to do much about those blocked coronary arteries. However, you will offer yourself the best chance to minimize serious medical conditions by ensuring you eat well. An ounce of prevention is worth many cures in a survival crisis, not a pound. You'll have the best chance of staying healthy if you start that way.

Nothing your great-grandparents did as part of their plan to succeed in life is being demanded of you. In a manner, a collapse will take us back to that

time. It's crucial to grasp some techniques they employ to maintain their health.

Some of our family ponder why we devote so much time to getting people medically ready for a huge catastrophe. They are certain that no scenario would take away, even briefly, the wonders of high technology, even though history teaches us otherwise. Why should we aim to make everyone a doctor when, they tell me, we can't?

Are we attempting to make everyone a physician? No, there is more to learn than can be learned in a lifetime. Even as medical specialists, we frequently encounter medical circumstances about which we are unsure. Make careful you compile a survival library because that is the purpose of medical books. Just as we do, you can make use of them as needed.

However, we're working to improve you from the medical asset you were to your family and neighborhood. We fully believe that you can learn how to treat most problems you will meet in a grid-down situation, even if you have not received formal medical training. If necessary, you can serve as the last resort for the medical care of your people.

If you can take in the knowledge we offer in this manual, you will be prepared to assist if the worst-case scenario occurs. If you were to save only one life in the future, our quest would have been a success.

WILDERNESS MEDICINE VS. LONG-TERM SURVIVAL MEDICINE

What is outdoor medicine, often known as wilderness medicine? We describe it as medical treatment where access to modern facilities, training, and care is limited. Medical attention to wilderness treks, marine expeditions, and travels to underdeveloped nations would be considered wilderness medicine.

The fundamental premise is that there are skilled medical professionals and advanced hospitals, but they are not available when needed (perhaps for a significant period). Stabilizing the patient will be your responsibility as an

interim caretaker. That entails preventing the illness or damage from getting worse.

Even though they may be hundreds of kilometers from the patient's location, your main objective will be transporting the patient to contemporary medical facilities. Your duty to the unwell or injured person will end once you have moved them to the next available medical resource. EMTs and military corpsmen can identify this tactic as "stabilize and transport."

Even though wilderness medicine's guiding principles have saved countless lives, this strategy is distinct from what we would refer to as "long-term survival" or "collapse medicine." Modern medical care is unavailable in a collapsed society and is unlikely to become available shortly.

Due to these circumstances, you would no longer be the temporary first-aid provider but the final carer. You become the highest medical resource available if you have a medical degree.

You will need to modify your medical plan in light of this knowledge. The patient's long-term care is now your responsibility. As a result, you will need to acquire more information and training than you do now if you want to succeed in your new role. You will also require more supplies if you want to keep your family or friends healthy. To handle any potential medical requirements they may have, you'll need a strategy.

Long-term survival medicine

For non-physicians, medical education and training options include wilderness medicine courses, EMT certification, and even military medical corps training. These courses assume that you are providing care to transfer your patient to a functioning clinic, ER, or field hospital afterward. This training is highly helpful if you can put in the effort; it's much more likely that you'll encounter a short-term lack of medical support than a long-term one.

Despite this, you must prepare for the potential that one day you will be alone. You need to change the way you think about things to accommodate a time when emergency rooms and intensive care units are inaccessible. You won't have the option of handing over the sick or injured person to a

professional healthcare provider; therefore, you must be prepared to care for your patient throughout the entire process.

You'll also need to know how to manage some chronic medical disorders. Even a paramedic, for instance, is unlikely to be able to treat an abscessed tooth or a thyroid disease without access to high-tech medications.

As a result, you need to acquire techniques that will still be effective if the power goes out. You could even need to use earlier techniques that current doctors might consider outdated. The vast majority of issues you'll encounter in a power outage should be treatable using a combination of prevention, improvisation, and wise resource management.

Although it may seem overwhelming, we hope this book will provide you with enough knowledge to make you comfortable in your new position. You will experience that peaceful resolution from knowing you can handle the situation once you know what to do in every situation. You'll be aware that you're up for the task at hand.

THE IMPORTANCE OF COMMUNITY

Let's say that a disaster has struck, and you have managed to survive. Since the electricity grid is down, it won't likely be operational for many years. However, you are safe in your shelter because you have thoughtfully stocked food, medical supplies, and farming and hunting tools. You are a lovely, young, athletic person who is healthy and bright. Unfortunately, you have no idea what to do as soon as possible to ensure your survival and future health.

The very first step in ensuring your medical well-being is extremely straightforward: Don't go it alone! The abandoned animal in the picture above is a thylacine, also known as a Tasmanian wolf. Why didn't I go with a gorgeous red or gray wolf instead of this creature? I chose it because, like the Tasmanian wolf, you will also go extinct if you try to handle a long-term catastrophic situation on your own. If you want to have any chance of staying together when things start to fall apart, you must have the backing of a survival group, even if it is just your extended family.

There will be things that are difficult for you to envision taking place in a spartan environment. You'll need to keep an eye on your property. Gallon loads of water must be carried from the closest water source. You can simulate what it might be like to live there by filling a 5-gallon bucket with water and walking 100 yards with it (after staying up until 4:00 a.m. outside your home).

Your health will suffer, and your long-term survival prospects will decrease if you are the only one carrying this weight. You will find yourself an easy target for roving gangs and bacteria if you are exhausted and lack sleep. When under prolonged stress, your immune system deteriorates, putting you at risk for diseases that someone with adequate sleep might be able to overcome. A difficult problem will be easier to handle if there is a division of labor and responsibilities.

Imagine how much more doable this will be with a group of people working together who share the same values. Even if you're Daniel Boone, you can't possibly have all the abilities required to succeed on your own. A tough individualist might be able to make a wretched living in the woods by themselves, but a community is required to rebuild a society.

There is no better moment than the present to connect with others, network, and assemble a group of like-minded individuals. Your retreat and your resources will determine the ideal amount of capable people to gather for a mutual-assistance group. People with different skill sets but similar beliefs will make up the ideal team.

You could believe it is hard to identify and assemble a group of individuals who could support you in times of need unless you are already a part of such a community. Fortunately, that's not the case. In internet forums dealing with readiness, you'll come across many fellow citizens.

But simply being a part of a group is insufficient. That group's members must hold frequent meetings, establish priorities, and initiate action. Prepare plans A, B, and C, and collaborate to ensure the success of their implementation. Maintain open communication channels to ensure that everyone in your group is informed.

Improve your health before anything bad happens. How can you expect others to lead by example in maintaining good health and fitness if you, the

medical provider, don't? It's time to put your words into action. You can achieve this objective by

- Keeping your weight in a healthy range for your height and age.
- Adopting a balanced diet.
- Keeping up good hygiene.
- Remaining physically healthy.
- Getting rid of bad habits (smoking and more).
- Promptly addressing current medical problems.

It's crucial to "tune-up" any ongoing issues you may be experiencing. For instance, you'll want to control your blood pressure. If you have a bad knee, you could think about having it surgically fixed to perform at your best when things become tough. When contemporary technology is available, use it.

Dental issues should also be taken care of before tough times prevent access to contemporary dentistry. Do you recall how your last toothache impaired your ability to function efficiently? Your preparations will be pointless if you don't work to accomplish all of the objectives above.

This strategy is crucial for both your physical and mental wellness. Even simple mental exercises like solving crossword puzzles or reading the newspaper can assist. Keep in mind that wasting a mind is a dreadful thing. Avoid wasting yours.

Work to break any harmful habits you may have. How will you be able to perform in a position where your health and stamina will be regularly tested if you smoke and harm your heart and lungs? How can anyone trust your judgment if you abuse drugs or excessive alcohol in dire circumstances?

Maintaining good hygiene is also crucial to your performance in difficult situations. It will be difficult for retreaters to stay healthy if their retreat is not kept clean. Infections typically only seen in developing nations will become widespread during a collapse, and basic medical supplies will include items like soap and bleach.

Developing a sense of community and engaging in preventative health care and exercise are two fundamental measures to help you get ready. If

everything else fails, they won't cost you anything and will give you the best chance of success.

BECOMING A MEDICAL RESOURCE

The survival medic should do a status assessment as soon as possible to prepare for a collapse. The following queries must be raised and addressed.

What Will Your Responsibilities Be?

It goes without saying that you will be in charge of the survival group's medical care as a medic. What does that signify, though? It implies that in addition to serving as a chief medical officer, you will also assume the following responsibilities:

Director of sanitation

It will be your responsibility to ensure that the members of your camp or retreat don't contract diseases due to unhygienic conditions. This will be a significant problem in a hard environment.

Some of your duties may involve installing and building latrines, while others will involve overseeing the proper filtration and sanitation of water. The maintenance of appropriate personal and group hygiene and the assurance of adequate cleaning of food preparation surfaces will be crucial.

Chief dental officer

According to medical officials, patients arriving at a sick call during a war or in a distant region reportedly complained about oral issues just as much as medical issues. Anyone who has experienced a severe toothache knows that it impacts focus and work productivity. To be a successful doctor, you must be able to handle dental problems (toothaches, fractured teeth, lost fillings, etc.).

Chief counselor

Any societal breakdown will undoubtedly hurt people's thinking, as is obvious. You'll need to know how to deal with sadness and anxiety along

with cuts and broken bones. Both your medical and communication skills will need to be improved.

Medical quartermaster

When do you use all the medical and dental materials you've accumulated? When will you distribute the last of the antibiotics you have on hand? It's possible that these things can't be produced in a survival situation. You can determine your level of long-term preparation to manage medical emergencies by carefully tracking supplies stock and usage.

Medical archivist

You are in charge of collecting the members of your group's medical histories. This list will help you keep track of all the ailments, allergies, and possible drugs your people may be taking. It would be nearly impossible to remember all this information if your community is big.

Additionally, it's crucial to document the histories of the therapies you've given to each patient. Your archives will be a useful tool for the person in charge when you aren't available because one day, you might not be able to provide care.

Medical education resource

You cannot be in two places at once and must ensure that your group members have a basic understanding of medicine. It's crucial that they can take care of illnesses or injuries while you're gone.

These duties are numerous, but your group's composition may allow for some modification. A pastor or other member of the church may be able to relieve you of some of the stress associated with counseling. Accept all assistance you can.

How many individuals will you be in charge of?

The number of persons you will be accountable for should be closely related to the medical supplies you have on hand. If you have five treatment courses of antibiotics on hand, it might be adequate for a couple or a single person, but if you are caring for twenty individuals, it will run out quickly.

Keep in mind that the majority of those employees will be executing duties outside of their comfort zone. They'll be building campfires, sawing wood,

and carrying water containers. As they go about their regular lives, you'll observe more sprains, strains, fractures, lacerations, and burns among those people.

It is only logical to stockpile as many supplies as you can. You may have to deal with more survivors than you anticipated; it's highly likely. The largest error a survival medic will likely make is underestimating how many people will show up at their door during a crisis.

Don't worry about having too much money in storage. Anything considered "extra" will always be greatly sought after for bartering. In difficult times, food and medical supplies will be more valuable than money and gold. Your closet full of bandages shouldn't make you complacent because you won't need them all up right away. Always keep more medical supplies on hand than you believe your group's needs will require.

What Particular Needs Will You Be Responsible For?

You will deal with different issues depending on who is in your organization. Children and the elderly have distinct medical needs from normal adults. Women experience various health issues that males do not. You must be aware of any members of the group who have a chronic illness, such as diabetes or asthma. The consequences of not accounting for issues like this could be disastrous. Would you, for instance, be ready if you learned that a group member needed adult diapers after a disaster?

The tools and medical knowledge you need will change depending on these factors. Encourage those with special needs to gather the supplies they'll frequently need. Encourage them to be open with their doctor and to get additional prescriptions for medications in case of an emergency (filled in advance).

What Physical Environment Will You Live In?

Is the retreat located in a cold region? If so, you will need to understand how to maintain warmth and deal with hypothermia. If you live in a hot environment, you should be familiar with heat stroke first aid. Is it humid and rainy where you are? You'll need a plan to keep your group members dry because chronically damp people don't stay healthy. Are you in a setting

that resembles an arid desert? If so, you must devise plans to supply a lot of clean water.

Some people reside where all of the circumstances above can occasionally be found throughout the year. These factors might even influence where you decide to live if a collapse is approaching.

How long do you anticipate being the only source of medical care?

For a brief time, access to medical care may be restricted in the event of certain disasters, such as those that cause significant tornado or hurricane damage. Other circumstances could cause a long-term breakdown.

The more goods you need to stockpile and the more varied those supplies should be, the longer you will be your group's primary source of healthcare. You probably won't need, for instance, tools to extract a diseased tooth if the tragedy leaves you without access to healthcare for a few weeks. However, that technology will be crucial if there is a real collapse. Don't forget to prepare for concerns that may arise later, including birth control for a daughter who hasn't hit puberty.

How Can I Get the Knowledge I Need to Be a Successful Healthcare Provider?

A good collection of literature on nutrition, survival, dentistry, and medicine can equip you with the knowledge you need to be a successful medic. Even if you were already licensed to practice medicine—say, as a general practitioner—you would require several references to learn how to carry out surgical treatments that you would typically refer to the nearby surgeon.

Printed material is more significant off the grid, but don't discount internet information sources. Utilize websites that offer reliable medical information. You can build a special knowledge base that meets your demands by gathering material you think would be useful in your particular situation.

There are thousands of medically related films on nearly every topic on websites like YouTube.com. They include anything from extracting damaged teeth to setting broken bones and suturing wounds. Watching

something happen in action is always preferable to merely looking at a photograph.

How Do You Obtain Medical Training?

There are several ways to obtain hands-on instruction. Almost every municipality provides access to various programs that could improve your performance as a healthcare practitioner.

The final goal of these programs is to transfer the patient to a hospital. These programs might not be ideal for long-term survival because medical facilities might not be available during a disaster. However, you will still acquire a lot of essential materials.

Most of us won't have the time or means to devote ourselves to such intense training, even though EMT courses are fantastic. A Red Cross first responder or community emergency response team (CERT) course is the way to go for the majority of us. These programs would undoubtedly be a fantastic place to start because they cover many of the same topics. A typical course lasts 40 to 80 hours.

Of course, whether or not a person will be in charge of providing medical care in an emergency, everyone should attend a standard cardiopulmonary resuscitation (CPR) course offered by organizations like the Red Cross and others.

Utilize your free time to volunteer in the neighborhood ER. You'll become less sensitive to witnessing blood and wounds and learn vital information by simply observing.

CHAPTER 2

LIKELY MEDICAL ISSUES YOU WILL FACE

Tailoring your education and training to the probable medical issues you will have to treat is important. By looking at the experience of caregivers in remote settings, you can determine what medical supplies will be needed and prepare yourself for the most likely medical issues.

It wouldn't be unusual to see the following:

Trauma

- Minor musculoskeletal injuries (sprains and strains)
- Minor trauma (cuts, scrapes)
- Major traumatic injury (fractures, occasional knife or gunshot wounds)
- Burn injuries (all degrees)

Infections

- Respiratory infections (pneumonia, bronchitis, influenza, common colds)
- Diarrheal disease (sometimes in epidemic proportions)
- Infected wounds
- Minor infections (urinary infections, "pinkeye")
- Sexually transmitted diseases
- Lice, ticks, mosquitoes, and the diseases they carry

Allergic reactions

- Minor (for example, bites or stings from insects)
- Major (anaphylactic shock)

Dental

- Toothaches
- Broken or knocked-out teeth
- Loss of fillings
- Loose crowns or other dental work

Women’s issues

- Pregnancy
- Miscarriage
- Birth control

Pregnancy is generally considered safe, but the pregnancy news was welcomed with delight and concern not so long ago. Women were affected by complications, including miscarriage, bleeding, and infection, so you should make significant plans to avoid getting pregnant, at least until things get back to normal.

MEDICAL SKILLS YOU WILL WANT TO LEARN

What will I need to know is a legitimate inquiry for a future medical professional to pose. "As much as you're willing to learn," is the response. You can get a fair idea of the abilities you'll need by using the list of potential medical problems from earlier. Numerous ankle sprains, colds, wounds, rashes, and other common medical conditions that strike you today are expected. But you should be prepared to handle more serious issues, like a broken limb or another severe accident. Additionally, you'll need to be aware of the medical items you'll need and how to use them. The knowledgeable medic will know the following:

- How to measure blood pressure, respiration, and other vital indicators.

- How to apply bandages and wraps to wounds.
- How to take care of and watch over an open wound.
- How to handle burns of various intensities.
- The dosages, frequency of administration, side effects of various medications, and indications for their usage. You will need resources like the Physicians' Desk Reference to complete this; you cannot do it alone. This substantial volume, released once a year, contains all the information you'll need to use for prescription and over-the-counter medications.
- How to do a typical baby and placenta delivery.
- How to bandage, cushion, and splint a fracture, dislocation, or sprain.
- How to recognize infectious bacterial infections (such as strep throat).
- How to recognize infectious viral infections (such as influenza).
- How to recognize infectious disorders caused by parasites and protozoa (such as giardiasis).
- How to recognize and take care of insect bites and stings as well as head, pubic, and body lice.
- How to recognize poisonous snakes and handle snake bites and other animal attacks.
- How to recognize and treat the different types of abdominal, pelvic, and chest pain.
- How to handle anaphylactic shock and allergic reactions.
- The recognition and treatment of sexually transmitted illnesses.
- Diagnosing and treating dental diseases (such as replacing fillings, treating abscesses, and performing extractions).
- How to recognize and handle rashes and skin conditions.
- How to care for a bedridden patient (such as treating bedsores and transport considerations).
- Standard hygienic, dietary, and sanitary procedures. (This is incredibly crucial.)
- Advice for treating patients who are nervous or depressed (common in times of trouble).
- The proper way to implant an IV line. (This is covered in EMT classes.)
- How to treat a cut.

Understanding when to close a wound is more crucial than knowing how to do it. Most injuries sustained outside will be unclean; by covering an injury, germs may become trapped in the tissues and spread infection.

The ability to prevent illnesses and injuries may be crucial to master. Keep an eye out for small details, like if your workers are dressed suitably for the weather. Ensure that hand and eye protection are used at all times while working. You will prevent many injuries and diseases if you learn to identify circumstances that put the people you are medically responsible for in danger.

Do not think that knowing all this knowledge is difficult or that you cannot be useful if you simply understand some of the information above. It's crucial to gain the knowledge necessary to handle some more typical medical conditions.

THE PHYSICAL EXAM

By choosing to read this book, you have chosen to assume responsibility for your family's medical care after a calamity. Consequently, it will be required to accumulate knowledge on how to assess a patient and arrive at a diagnosis.

You'll need to put your (gloved) hands on them and be able to systematically assess any wounds or seek physical indications of sickness. Sometimes the issue is immediately apparent, while you must thoroughly examine the body to find the issue. Always explain to the patient who you are, what you are doing, and why during an examination. Maintain your composure and exercise extreme caution when attempting to move or act in a way that is above your capacity.

Checking the vital signs provides the simplest information. The following is included in this:

Pulse rate. Two fingers can be used to press on the inside of the wrist or the side of the neck to take this (by the base of the thumb). At rest, a healthy pulse should be 60 to 100 beats per minute. If you want to know the beats per minute, you can select to feel the pulse for, say, 15 seconds and multiply

the result by 4. But it would be more accurate to say a full minute. Most people who are agitated after suffering an injury will have a high pulse rate; you'll notice (tachycardia).

Breathing rate. For the most accurate reading, analyze this for a full minute. At repose, an adult typically takes 12–18 breaths per minute; children typically take slightly more. Take note of any oddities, such as wheezing or gurgling sounds. Tachypnea, which is defined as breathing more than 20 times per minute, is an indication of discomfort.

Arterial pressure. The amount of effort the heart must expend to pump blood throughout the body is measured by blood pressure. At rest, you want your blood pressure to be less than 140/90. After intense exercise, blood pressure may be high, but it quickly returns to normal. Some people deal with chronic high blood pressure. A person who has hemorrhaged or is in shock may have very low blood pressure. The book's chapter on high blood pressure includes instructions on how to take a blood pressure reading.

Mental condition. You want to be sure that your patient is awake and can respond to your directions. Inform your patient of what occurred. Ask straightforward inquiries like their name, where they are, or the year if they appear lost. Keep track of if the patient seems agitated or lethargic. Some individuals may seem unresponsive but react upon a spoken instruction, like "Hey! Get your eyes open! If there is no response, try applying little pressure to the patient's breastbone to see if they respond to the stimuli. If they don't, there is a very big problem.

Temp. of the body To ensure the patient doesn't have a fever, take their temperature. The range of a normal temperature is 97.5 to 99.0 degrees. (Note: This book only uses Fahrenheit to express temperature degrees. Use the following equation to convert to Celsius: multiply by 1.8 and add 32.) A temperature greater than 100.4 degrees is considered a severe fever. Hypothermia, commonly known as a cold-related sickness, may be indicated by extremely low temperatures (below 95 degrees). On the other hand, hyperthermia is a condition where the body's temperature rises above 105 degrees.

After taking the vital signs and confirming that there are no evident injuries, conduct a general systematic checkup from head to toe. Feel the skin of the

patient. Is it humid or dry, hot or cold? Is the patient pale, or is there redness? As you descend, examine the head region. Are there any bumps on the head, and are the ears, mouth, or nose bleeding? Check the eyes to check if they have a reddish appearance. Using a light source to test whether the pupils react to light evenly.

With a light source and a tongue depressor, ask the patient to open their mouth so that you may look inside for any redness, sores, or dental problems. Feel the back of the head and neck, especially the neck bones, for any signs of injury (vertebrae).

Auscultation, or listening to the chest with a stethoscope, is a medical term. Can you hear the patient breathing as you move the instrument over various parts of each lung? Do you hear any sounds that shouldn't be there? To gain a firm understanding of what sound clear lungs should make, practice listening to healthy people. The noises of wheezing, gurgling, and crackling would be abnormal.

Listening to the listening to check if the heartbeat is normal or erratic. Look for rough spots along the ribs that can indicate a fracture. Look for lumps in the axilla, often the area under the arms. Perform a breast exam by circling the breast tissue with your fingers, beginning at the axilla's edge and finishing at the nipple.

Palpate, which means to press with an open palm, the abdomen. Is pain present? Is the stomach soft, or is it firm and bloated? Feel any masses there? To hear the rumbling of the bowels, use a stethoscope. Intestinal motility may be lacking if there are no bowel movements, and some diarrheal diseases may cause excessive bowel movements. Tap the middle finger of your open hand with the various abdominal quadrants. "Percussion" is the term for this. Normally, the abdomen will sound hollow but dull, where a mass might be present. To check if the liver is enlarged, press down on the right side just below the rib cage (if the liver isn't enlarged, you won't feel anything). On the left side, under the bottom of the rib cage, there will be a mass that is the size of an enlarged spleen.

For signs of pain or damage, look along the patient's spine. If the patient has been injured or has an infection, lightly pound with a closed palm on each side of the back, below the final rib, where the kidneys are located.

Feel the muscle groups in each extremity to check for pain or reduced range of motion. Examining the color of the patient's finger and toe tips can determine whether or not their circulation is strong. These areas will appear white or blue due to poor circulation. By lightly tapping with a safety pin, you can check for sensation. Ask the patient to lift their legs to assess for normal strength and tone by placing your hands on their thighs. With both hands, ask them to hold your fingers while you try to yank their hands away. It's okay if you are unable to.

Each side of the human body is roughly the same if a vertical line is drawn through it (with a few internal exceptions). This means you can compare a limb to the other side if you are unsure whether it is damaged or malformed. Each side should be roughly equal in strength.

These are only a few fundamentals. There is much more to a physical exam than we've just discussed, but getting practice on others can help. As time goes on, you'll gain a sense of what is typical and what isn't.

CHAPTER 3

MEDICAL SUPPLIES

It needs the right tools to properly tend to other people's medical requirements. Imagine a hunter having to use a pea shooter instead of a rifle or a carpenter having to use a steak knife as a saw. The doctor is in the same boat.

It's crucial to remember that many medical supplies have a value that is heavily influenced by the information and skills the user has acquired through practice and study. Someone who doesn't know how to take their blood pressure won't find much use for a blood pressure cuff. Focus on getting things you can use right away, and as your skills improve, graduate to more sophisticated gear.

Remember that many items can be used in unconventional ways. For example, a bandanna can be used as a sling, an ironing board can be used as a stretcher, and a sewing needle and fine fishing line can be used to close a

wound. If you look carefully, you might find items in your own home that can be used for medical purposes. You'll be astonished at the medical concerns you are already prepared to handle if you look with a creative eye.

Clean vs. sterile

The degree of cleanliness of the tools used to administer medical treatment in a survival situation plays a significant role in the effectiveness of that care.

In medicine, "sterility" refers to the absence of all germs. Sterile tools, towels, dressings, and hand washing with specific solutions are all part of the sterile method. When used on a patient, the immediate vicinity of these objects is referred to as a "sterile field." The sterile field is carefully maintained to avoid contacting anything that would allow bacteria to infiltrate it.

Instruments, towels, and other materials that might come into contact with the patient are placed in an autoclave, a form of a pressure cooker, to ensure the destruction of any microorganisms. This device cleans the equipment in all medical facilities, including hospitals and clinics. Your tools will be closer to the sterility required for minor surgical procedures if you include a pressure cooker in your inventory.

For instance, in a harsh environment, it may be quite challenging to create a sterile field. We might only be able to keep things "clean" in this situation. The methods for doing this focus on minimizing the number of bacteria that might be transmitted from one person to another by medical devices. A clean field begins with thorough hand washing in hot water and soap.

Some disinfectants are used to keep a space clean. Chemicals called disinfectants are administered to inanimate objects to eradicate microorganisms. Surfaces where you would treat patients or prepare meals, would fall under this category. Disinfection is less efficient than sterilization since not all germs are necessarily killed by it. Bleach is a common example of a disinfectant.

Disinfection eliminates bacteria, viruses, and other pests and is occasionally mistaken for decontamination. However, decontamination can also refer to removing harmful poisons and may involve the removal of chemicals or

radiation. Decontamination, as opposed to disinfection, is the removal of nonliving contaminants like radiation from a surface.

Understanding the distinctions between a disinfectant, an antibiotic, and an antiseptic is helpful. Antiseptics kill germs on the surface of live tissue, while disinfectants only kill bacteria and viruses on the surface of nonliving tissue. BetadineTM, chlorhexidine (Hibiclens), iodine, and benzalkonium chloride are a few examples of antiseptics (BZK).

In the human body, germs can be eliminated using antibiotics. Amoxicillin, doxycycline, metronidazole, and many other medications fall within this category. These will be covered in more detail later on in the book.

HEALTH KITS

Most first-aid kits sold in stores are suitable for family outings or days at the beach, but in this book, we talk about serious medical needs. Below, we list the three categories of medical kits. A personal carry or individual first-aid kit, sometimes known as an IFAK, is the first. Every individual can carry this portable kit at the party. It makes it possible to treat a few common medical issues that arise in remote locations or while traveling.

The family kit, the second kit on the list below, is portable and can fit its contents in a typical large backpack. It will work as a family's and their kids' medical "bug-out" (travel) bag. It is, in our opinion, the bare minimum of gear that a household's head would require to deal with typical emergencies in a long-term survival situation.

The third kit is the community clinic kit or everything a skilled medic will have stocked up for long-term treatment of his or her own survival family or group.

Don't be scared by the clinic version's massive amount of supplies; it would be sufficient to act as a surprisingly well-equipped field hospital. Few of us have the money or knowledge necessary to afford and utilize each and everything. You will have done much if you put together a good family kit.

Countless other items may be added to the list, but the key is to stockpile supplies and equipment that you will feel confident using in the event of an illness or injury. Stretchers and tourniquets are supplies that can be made with simple home items.

It should be cautioned that several sophisticated pieces of equipment could be quite hazardous if not used by a skilled surgeon. A functioning power grid would also increase the effectiveness of certain supplies in achieving their goals. These things are a wish list of what I would need if I were looking after an entire neighborhood.

You shouldn't think that building up the more complex supplier lists is your sole responsibility. Under the medic's direction, your entire crew should contribute to gathering medical supplies. The same holds for each of the previously mentioned medical skills. To learn everything would need a lifetime of study, which is more than even the majority of doctors with formal training can manage. Focus on the things you're most likely to use frequently.

IFAK or Personal Carry Kit

- One cold pack or hot pack
- 1 ACETM wrap (4 inches)
- 1 Israeli bandage or another compression bandage (6 inches)
- 1 CeloxTM hemostatic agent (stops bleeding)
- One tourniquet
- Two eye pads
- 1 pack (2 sheets) Steri-StripsTM
- One nail scissors
- One straight hemostat clamp (5 inches)
- 1 nylon suture (size 2–0)
- 1 Super GlueTM or medical glue packet
- One tweezer
- 1 LED penlight
- One stainless steel bandage scissors (7.25 inches)
- 20 adhesive bandages (1 inch by 3 inches)
- Ten adhesive bandages (2 inches by 3 inches)
- Two sterile dressings (5 inches by 9 inches)

- Five pairs of large nitrile gloves
- 20 nonsterile gauze pads (4 inches by 4 inches)
- Ten sterile gauze pads (4 inches by 4 inches)
- Five nonstick sterile dressings (3 inches by 4 inches)
- 1 rollgauze sterile dressing
- 1 MylarTM solar blanket
- One cloth medical tape (1 inch by 10 yards)
- One duct tape (2 inches by 5 yards)
- One triangular bandage with safety pins
- One tube of triple antibiotic ointment
- Ten alcohol wipes
- 10 povidone-iodine (Betadine) wipes
- 6 BZK antimicrobial wipes
- Two packets of burn gel
- Six sting relief towelettes
- One hand sanitizer
- Note: Quantities will depend on the number of people for which you are medically responsible.
- Antibacterial soap and hand sanitizers
- Israeli battle dressings or another compression bandage
- Adhesive Band-AidsTM (various sizes and shapes)
- Large absorbent pads (ABD, etc.)
- Family Kit
- First-aid reference book
- Neck collar
- Medical tape (Elastoplast, silk, paper varieties; 1 inch and 2 inches)
- Duct tape
- Antiseptic and alcohol wipes
- Gauze dressing (various sizes—sterile and nonsterile)
- Gauze rolls (Kerlix, etc.)
- Nonstick pads (Telfa)
- Triangular bandages or bandannas
- Safety pins (large)
- Moldable splints
- Tourniquet
- Moleskin or Spenco 2nd SkinTM blister kit

- Cold packs, heat packs, hot water bottles (reusable if possible)
- Cotton eye pads, patches
- Eyewash, eye pads
- Cotton swabs (Q-tipsTM), cotton balls
- Disposable nitrile gloves (hypoallergenic)
- Face masks (surgical and n95)
- Tongue depressors
- Bandage scissors (all-metal are best)
- Saline solution (liter bottle or smaller)
- Steri-Strips or butterfly closures, thin and thick sizes
- Nylon or silk sutures (sizes 2–0, 4–0) and/or stapler kit
- Tincture of benzoin (glue to hold Steri-Strips in place long-term)
- Survival sheet/solar blanket
- Scalpel or field knife
- Chest seals
- Styptic pencil
- Hemostatic agents (Celox or QuikClotTM powder)
- Biohazard bags
- Tweezers
- Magnifying glass
- Headlamp or penlight
- Stethoscope
- Blood pressure cuff
- Irrigation syringe (60–100 cc)
- Kelly clamp (straight and curved)
- Needle holder
- Thermometer
- Antiseptic solutions (Betadine, Hibiclens, etc.)
- Hydrogen peroxide (3 percent)
- Insect repellant
- Ammonia inhalants
- Acetaminophen/ibuprofen/aspirin
- Benzalkonium chloride wipes
- Witch hazel
- Antibiotic ointment
- Antacids

- Sunblock
- Lip balms
- Pseudoephedrine (SudafedTM)
- Hydrocortisone cream (1 percent)
- Lidocaine cream (2.5 percent; local anesthetic)
- Bismuth Subsalicylate (Pepto-BismolTM)
- Diphenhydramine (BenadrylTM) or loratadine (ClaritinTM)
- Loperamide (ImodiumTM)
- RIDTM Lice Killing Shampoo, Fels-Naptha, or Zanfel soap
- Soap for general use
- Oral rehydration packs (or make them from scratch)
- Water purification filters or tablets
- Gold Bond foot powder
- Birth control accessories (birth control pills condoms, , etc.)
- Epinephrine (EpiPenTM, a prescription injection for severe allergic reactions)
- Herbal teas, salves, tinctures, and essential oils
- Raw, unprocessed honey
- Dental Tray:
- SilvadeneTM cream (for burns)
- Oral antibiotics
- Zofran (for nausea and vomiting-prescription)
- Cotton pellets and rolls
- Dental mirror
- Zinc oxide
- Commercial dental kits (Dentemp, CavitTM)
- Hanks' solution
- Dental scraper, toothpicks
- Dental floss
- Dental wax
- Clove bud oil
- Chromic suture (size 4–0)
- Needle holder
- ActCelTM oral hemostatic agent (stops dental bleeding)
- Extraction equipment (forceps and elevators)
- Gloves, masks, and eye protection

Community Clinic Supply List

- Nasal airways
- Resuscitation facemask with one-way valve
- Resuscitation bag (AmbuTM bag)
- For a long-term care center

Obtain all of the above in larger quantities, plus the following:

- Extensive medical library
- Stethoscopes
- CPR shield
- Treatment table
- Plaster of Paris cast kits (4–6 inches)
- Naso-oropharyngeal airway tubes
- Endotracheal tube/laryngoscope (enables you to breathe for the patient)
- Portable defibrillator
- Blood pressure cuff
- SAM splints
- Scrub suits, goggles, or face shields
- Foldable stretchers
- Pregnancy test kits
- Sterile drapes
- Air splints
- Paracord (various uses)
- Otoscope and ophthalmoscope
- Urine test strips
- Triage tags (for mass casualty incidents)

IV equipment:

- Syringes (2, 5, 10, and 20 ml)
- Needles (gauges 20–24)
- Dextrose and normal saline (50 percent) IV solution bags
- IV kits (gauges 16–24)
- Normal saline solution bags
- IV tubing sets

- Paper tape (½ inch and 1 inch)
- IV stands
- Prescription Medications
- Medrol dose packs
- Antibiotic and anesthetic eye and ear drops
- Oral contraceptive pills
- Metronidazole
- Penrose drains (to allow blood and pus to drain from wounds)
- Saline solution for irrigation (can be made at home as well)
- Foley urinary catheters (sizes 18, 20)
- Sulfamethoxazole/trimethoprim
- Ceftriaxone
- Diazepam
- Alprazolam
- Urine bags and enema bags
- Nasogastric tubes (to pump a stomach)
- Pressure cooker (to sterilize instruments, etc.)
- Amoxicillin
- Cephalexin
- Ciprofloxacin
- Doxycycline
- Clindamycin
- Oxytocin
- PercocetTM
- Morphine sulfate or DemerolTM

CHAPTER 4

NATURAL REMEDIES

Numerous problems can be solved effectively with cutting-edge technology, contemporary facilities, and equipment. Indeed, I just spent the entire last chapter advising you to stock up on various high-tech products, including defibrillators! Several of these items are essential for managing particular medical conditions.

Unfortunately, you probably won't have the money to build a sizable medical supply cache. Even if you are successful, your supplies will only be effective for a limited period. You might be surprised by how quickly expensive medicines and other supplies are depleted.

Purchasing excessive quantities of frequently used medical goods is one approach, but even sizable stockpiles will eventually run out due to the problems you'll face. Consequently, you will need a method for creating compounds that will be useful in medicine. The ideal place to begin would be with the plants in your backyard or neighboring forests.

In society, doctors have filled various roles throughout history, including priests in ancient Egypt, slaves and barbers in imperial Rome and the Dark Ages, and artists in the Renaissance. These ancient healers employed

various techniques, but they all shared a similar understanding of the value of using natural remedies. They cultivated a particular plant if they needed more of it than what was available in their natural habitat. They studied how to prepare these ingredients for use in teas, tinctures, and salves and the best ways to employ them to treat illness. We will have to use their knowledge that current medical care is no longer available.

Salicin, a natural painkiller found under the bark of willow, poplar, and aspen plants, serves as an illustration. The first method for extracting salicylic acid from these trees for commercial use was created in the nineteenth century.

Anyone prepared to assume responsibility for others' health should have natural medicines in their medical toolkit. Why not take advantage of all the resources at your disposal? The therapeutic herbs and plants you raise in your garden may be all you have at some point.

Natural ingredients can be included in "home cures" in several ways, such as the ones listed below:

Tea is a hot beverage created by steeping dried; crushed plant leaves in boiling water.

Tinctures, sometimes known as "decoctions," are plant extracts produced by soaking plants in a liquid (such as water, grain alcohol, or vinegar) for a predetermined period.

Essential oils are liquids made up of aromatic combinations of naturally occurring plant components that have been substantially condensed. Most of these have a long shelf life and are often created through "distillation."

Highly viscous or semisolid substances applied to the skin are called salve (also known as ointment, unguent, or balm).

Some of these items can be taken directly or diluted before consumption. A significant advantage is that homemade medicines typically have fewer side effects than pharmaceuticals. The group medic is responsible for learning how to use and, yes, cultivate these plants.

Colloidal silver is another complementary medicine that some belief can strengthen immune systems and alleviate sickness. Small silver particles, silver ions, or silver coupled with protein are all suspended in a liquid to

create colloidal silver products. Before antibiotics were developed, silver compounds were used to treat illnesses.

Products containing colloidal silver are typically promoted as oral dietary supplements. They can also be applied directly to the skin, which is believed to speed up healing by reducing the risk of infection. It should be emphasized that prolonged use of silver may cause argyria, a condition. This uncommon disorder, which results in blue skin, is primarily aesthetic.

In several laboratory tests, silver particles and ionic silver (Ag+) have demonstrated an antibacterial effect. Doctors employ wound dressings that contain silver sulfadiazine (Silvadene). Increasing bacterial resistance to antibiotics has led to an increase in the usage of silver-containing wound dressings.

You should be aware that the US Food and Drug Administration (FDA) forbids sellers of colloidal silver from making any claims about their product's medicinal or preventative benefits. It cannot, therefore, be sold as a means of avoiding or treating any disease. Before silver becomes a staple of the medical toolkit, further proof is required.

POISON IVY, OAK, AND SUMAC

Poison ivy, poison sumac, poison oak, or all three are common in the outdoors unless you dwell in Alaska, Hawaii, or the midst of the desert. Eighty-five percent of people will develop an immunological reaction to one or the other after being exposed to it, resulting in an itchy rash of varying intensity. Even when vines or bushes are dormant, you can still experience a reaction to urushiol, the deadly oil that triggers a reaction after the first sensitizing exposure. This means that winter does not eliminate the potential of a reaction.

Leaves of three, let it be, as they say. While it is true that poison ivy has "leaves of three," numerous other plants also have this arrangement. Make sure you are familiar with its appearance.

Both poison oak and poison ivy contain urushiol, which makes them quite similar. Poison ivy leaves could be sharper, while poison oak leaves

frequently resemble oak leaves. Almost area in the contiguous United States has one or both.

In some areas of the eastern United States, poison sumac can reach heights of up to 30 feet as a shrub or small tree. There are 7–13 sharp leaflets on each leaf. Despite having the same irritant as poison ivy and oak, poison sumac is much more potent. It has been documented that simply breathing in the smoke from burning poison sumac can result in asphyxia death.

These plants are all urushiol-containing. The vines, leaves, and roots contain the oil. The best defense is to keep the oil away from your skin. Take the following safety measures if you can't avoid being around these plants:

- In locations where the plants are known to grow, wear long pants, long-sleeved shirts, work gloves, and boots.
- As a prophylactic measure, think about using the over-the-counter lotion IvyBlockTM. Apply it to potential exposure areas just like you would sunscreen. It should stop the oil from being absorbed by your skin.

The rash will manifest as red, itchy, spotty bumps over a few hours to many days. The rash can occasionally look practically linear.

Since urusel can also stay active for years on your clothing, thorough laundering is required. After 30 minutes of exposure, routine body washing with soap is ineffective since your body will already be building antibodies. Use only cold water at first, as hot water seems to aid the oil's absorption into the skin. But when the irritant has been completely absorbed, some advise taking hot water baths to reduce irritation.

Cleaning agents that take off resin or oil, including TecnuTM poison oak, ivy cleansers, or Fels-Naptha soap, are more efficient than conventional detergent and can be used even hours after contact. Another viable solution is rubbing alcohol, which is convenient to carry in the form of prep pads or hand sanitizers.

Even if you decide against treating the rash, it will go on its own in two to three weeks. Even though it's only going to last a short while, the itching can be unbearably bad. Diphenhydramine (Benadryl), taken four times a

day in 25–50 mg, will assist in reducing itching. It's critical to know that the 50 mg dosage will cause drowsiness. Unfortunately, the tried-and-true hydrocortisone cream and calamine lotion will probably not be particularly effective. It has been claimed that astringent treatments like Domeboro can relieve itching.

The prescription dose pack of Medrol has been used to treat severe rashes in patients (methylprednisolone, a drug similar to prednisone). Strong anti-inflammatory medication, prednisone, will work better to stop the inflammatory response your antibodies produce.

Alternative cures for poison oak, sumac, and poison ivy include:

- Cider vinegar (apple) (use to cleanse the irritated area)
- Blends of tea tree, lemon, lavender, peppermint, geranium, and chamomile essential oils with Aloe Vera gel
- Powdered baking soda
- Baths with Epsom salt
- Gemweed (mash and apply)
- A tea bag of chamomile compresses

CHAPTER 5

HYGIENE AND SANITATION

Many animals in the wild go to great lengths to groom and groom themselves. Their innate propensity to maintain cleanliness keeps them healthy. Spending time and energy keeping yourself clean increases your resilience to illness. People under stress pay less attention to cleanliness since they must focus all their energy on everyday survival chores.

The likelihood that your family or group may be exposed to unhygienic conditions will be somewhat under your control as the medic. Indeed, one of the key elements that will define your effectiveness as a caretaker is how diligent you are in this area. More than any medical intervention, strict adherence to good sanitation and hygiene standards will keep your family healthy.

Even with the best intentions, keeping clean is tough to maintain when there is no access to basic cleaning supplies like soap or laundry detergent. Therefore, it is in your best advantage to accumulate these products in large quantities.

Many areas, including dentistry and foot care, have cleanliness difficulties. We are more prone to issues like infections or infestations as we become

dirtier and wetter. As described in this section, we can prevent many medical problems by paying close attention to hygiene.

LICE AND TICKS

The "pediculosis" condition, often known as a louse infestation, is a typical health issue caused by poor hygiene. There are numerous species of wingless insects known as lice. There are three types of humans: head, body, and pubic. Some infections are spread by lice, with serious repercussions for entire families. Sometimes the scratching that lice cause results in skin cracks that let other illnesses grow.

Although it is believed that gorilla and chimpanzee lice gave rise to human lice, these parasites are often species-specific. This implies that, unlike with fleas, you cannot contract lice from your dog. You can only obtain them from other people.

Lice spreads quickly in crowded, unhygienic settings or where direct human contact is unavoidable. For instance, these circumstances exist in many schools where kids mostly interact with one another throughout the school day (head lice). Sharing personal goods can also result in a louse infestation; numerous people use combs, clothing, pillows, and towels are typical lice carriers.

A little sesame seed in size, adult head lice (Pediculus humanus capitis) are greyish-white in color. Head lice infestation can result in scratching and, in rare cases, a rash. However, this particular lice species is not a disease spreader. Even in industrialized nations, head lice are a fairly widespread problem; in the United States, there are 6–12 million occurrences a year, usually affecting young children.

Kids occasionally don't even realize they have them due to their underdeveloped immune systems, whereas adults typically remain scratchy and itchy unless treated.

The presence of the louse or its "nits" is used to make the diagnosis (eggs). Nits resemble tiny dandruff particles that are affixed to hairs. Finding adult lice and nits can be accomplished by combing the hair with a comb with fine teeth. Before treatment, lice are checked using specialized combs

designed to eliminate as many as feasible. In contrast to plastic nit combs available at pharmacies, metal nit combs are more popular.

About a quarter inch from the scalp, you will discover that the nits are securely connected to the hair shaft. Typically, oval-shaped nits will be yellow or white. Applying olive oil to the comb may make nits simpler to get rid of.

Compared to head lice, body lice (Pediculus humanus corporis) are recent arrivals; they likely only became a problem when people started wearing clothing. The idea of washing garments came much later; therefore, regular touch with filthy clothing frequently resulted in infestations.

This might be a problem for the homeless today, but it will probably become an epidemic when regular bathing and washing clothes become difficult. Body lice are slightly bigger than head lice, and they also vary in that they only feed on the body when necessary and instead live on clothing. They are more resilient than their cousins and can survive for about 30 days without contact with people.

In this situation, the best course of action is to remove the diseased clothes and, ideally, destroy them. Sometimes there is no need for medicine because the lice have already left the clothing (but don't bet on it). Unlike head lice, which are linked to diseases including typhus, trench fever, and epidemic relapsing fever, body lice are linked to infectious conditions. Areas of the skin exposed to body lice repeatedly may become strongly pigmented and stiff.

Lobster louse

Lice or mite infections in the pubic area are both possible causes. The "crabs," also known as pubic lice (Pthirus pubis), often begin in the pubic area but can eventually spread to any area where there is hair, including the eyelashes. Sexual intercourse is the most prevalent way that they are spread. The major symptom is intense itching, which can affect the eyelashes or even the hair in the axilla (armpit).

Pubic lice do not truly transmit other diseases, even though they are occasionally diagnosed in patients as sexually transmitted diseases since

they are typically passed from one person to another through sexual activity. The fact that pubic lice are one of the few "sexually transmitted diseases"TM that cannot be prevented by using a condom should be recognized.

Scabies is not caused by lice but rather by small, eight-legged creatures known as mites (Sarcoptes scabiei). The mites penetrate the skin, causing tiny, swollen, crimson lumps to appear. There is noticeable itching, which is worse at night. Even skin folds with few hairs, such as those found on the wrists, elbows, or spaces between the fingers and toes, are susceptible to scabies.

Medications referred to as "pediculicides" are used to eradicate certain kinds of infestation, and they include the following:

- RID shampoo; NixTM lotion (1 percent permethrin); (pyrethrin)
- The shampoo Kwell (lindane)
- Malathion in isopropanol at 5%

Both lice and their eggs will be killed using Nix lotion (permethrin). The lice will be killed by RID shampoo, but not the eggs. Seven days later, make sure to repeat the shampoo procedure. With the lotion, too, this might not be a bad plan. Request a prescription for Kwell shampoo from your doctor to keep on hand. For resistant patients, it is a considerably stronger treatment. Avoid administering this medication to children as it may have negative neurological adverse effects. Utilize these items as follows:

1. Begin by drying your hair. Stop using hair conditioners for a few days before taking the medication if you do. This will give the medication the best chance to affect the hair shaft.
2. Apply the medication to your scalp and hair.
3. After a few minutes, rinse.
4. After 8–12 hours, check for lice and nits.
5. Repeat the procedure after seven days.
6. Put all your remaining linens through a hot water wash (at least 120 degrees). To get rid of leftover head and body lice, you should place unwashable objects like plush animals in plastic bags for 2 to 5 weeks before opening the bags and letting them air outside. Brushes and

combs should be soaked in rubbing alcohol or extremely hot water. If at all feasible, clothing should be replaced frequently.

There have been all-natural treatments for lice for countless years. The chemical pyrethrin derived from the chrysanthemum flower is used in even over-the-counter drugs like RID shampoo. Another popular anti-lice product is ClearLiceTM, a natural remedy that, among other things, contains peppermint and is regarded by many as preferable to conventional treatments.

Combining tea tree and neem (a tree in the mahogany family) oils is another effective lice treatment. Apply a mixture of salt, vinegar, tea tree oil, and neem oil every day for 21 days, but only for external usage. As an alternative, applying witch hazel and tea tree oil after showering every day for 21 days has succeeded in getting rid of hair lice.

Witch hazel and tea tree oil and a triple mixture of tea tree, lavender, and neem oil applied to the pubic region for 21 days may also be useful in curing scabies. Some people recommend taking daily baths using 1/2 cup of borax and 1/2 cup of hydrogen peroxide for 21 days.

Ticks

Unlike lice, ticks are not as directly linked to bad hygiene. They are essentially arachnids like scorpions and spiders, although they are frequently mistaken for insects. Rocky Mountain spotted fever viruses are carried by American dog ticks, while the deer tick (commonly known as the black-legged tick) contains the tiny parasite that causes Lyme disease. Because some tick-borne illnesses have symptoms similar to influenza, doctors frequently overlook them. Other tick-borne illnesses might not have the characteristic "bulls-eye" rash that Lyme disease occasionally does.

The larval or juvenile stages of the deer tick are primarily responsible for Lyme disease. These are occasionally difficult to see because they are only a little larger than a pinhead. Every larval stage only eats once, very slowly, usually over several days. Summertime is when tick larvae are most active. Despite being most prevalent in the country's northeastern part, they appear to be moving further west every year.

Ticks don't fly like flies, jump like fleas, fly like flies, or fall from trees like your typical spider. The larvae like to reside in leaf litter, and as you go by, they cling to your lower thigh. The term "deer tick" comes from adults living in shrubs alongside game routes. You could discover them in woodpiles in populated regions (especially in the shade).

Many people don't consider using protective measures when they are outside to avoid coming into contact with ticks and other potentially dangerous animals or plants like poison ivy. Anybody spending the day outside should use caution:

- Cover any skin that is exposed below the knee.
- Put on sturdy socks (tuck your pants into them).
- Put on tall boots.
- Apply bug repellent.

Avoiding bites will increase if you use an effective bug repellant. You can apply citronella to your skin by rubbing the leaves, which are linked to plants like lemon grass and can be found naturally in some regions. Also effective is eucalyptus or soybean oil. If your environment is acceptable, consider putting these in your medicinal garden.

It's crucial to be aware that the time a tick feeds on a person increases the likelihood that a person will develop Lyme disease or another sickness carried by ticks. The good news is that most diseases do not spread during the first 24 hours. It is beneficial to get rid of that tick as soon as possible because the risk of infection increases after 48 hours. Ticks may not attach to a person's skin for several hours, so taking a shower or bath after being in the woods may just wash them off. Here is where maintaining proper hygiene pays off.

Take your best pair of tweezers and try to grab the tick as near to the skin as you can to remove it. You'll have the highest chance of successfully removing the tick if you pull it straight up. The mouthparts can sometimes stay in the skin after being removed at an angle, which could lead to an infection where they were a bit. Fortunately, it won't make you more likely to contract Lyme disease.

After that, sanitize the region with "triple antibiotic" ointment or Betadine. Tweezers are the most effective tool for removing ticks, even if alternative

techniques like burying it in petroleum jelly or setting it on fire are frequently used.

Fortunately, only 20% of deer ticks are parasite carriers of Lyme or another disease. In nearly half of cases, a bull's-eye-shaped rash develops. Anyone experiencing a rash combined with flu-like symptoms who cannot be treated with medication will require additional care.

Early stages can be treated with oral antibiotics. The recommended treatments for the sickness are doxycycline (100 mg twice a day for 14 days) or amoxicillin (500 mg three times daily for 14 days). These are available in certain veterinary drugs without a prescription (discussed later in this book). Don't be shocked if your patient continues to feel tired and has achy muscles after treatment .

BOOK 2

MASCAL

CHAPTER 6

THE MASS CASUALTY INCIDENT

Just now, you read about conducting a physical examination. Although most of these exams will be routine and unhurried, occasionally, you must make hasty decisions. The "golden hour"—the first hour following the victim's injury, when his or her likelihood of survival is greatest—is significant to remember in cases of major trauma. If a sufferer is not treated within that hour, their chances of survival substantially drop. Every thirty minutes that go by without attention causes it to get worse.

Typically, the healthcare professional will be attending to one sick or hurt person at a time. But there might come a time when you're faced with an emergency where several people are hurt. It's known as a mass casualty incident (MCI).

Any incident resulting in high casualties and severe injuries is considered a mass casualty incident. MCIs can manifest in a variety of ways, and they might include any of the following:

- Doomsday scenario occurrences like nuclear explosions

- Terrorist acts, such as those committed on September 11th or in Oklahoma City
- Repercussions of a disaster, like a tornado or a hurricane;
- Repercussions of civil disturbance;
- A mass transit accident (train derailment, plane crash, etc.)
- An automobile collision, for instance, in which three people suffered serious injuries, but only one ambulance was present

Any of the occurrences above must be accurately and swiftly triaged for medical intervention to be effective. Triage, which means "to sort" in French, is the procedure by which medical professionals may quickly assess and prioritize several injured patients, thereby providing the best care for the greatest number of people. I did not state, "Provide each victim with the greatest care available."

Analysis of an MCI Scene

Your first moves at the scene of an MCI could affect how the emergency response plays out. The five S's of appraising an MCI situation are as follows:

- Security
- Assessing
- Requesting assistance
- Setting up regions
- START, or simple triage and fast treatment, is a triage acronym.

1. Safety evaluation. The employment of primary and secondary bombs by terrorists in the Middle East is a cunning tactic. The second bomb is timed to go off or is detonated right when the medical and security professionals arrive, while the primary bomb causes the majority of victims.

Many medical professionals cringe when I mention not approaching the injured in a hostile environment. Remember that as a medic, your top priority is your survival; maintaining the health of the medical staff will probably save more lives in the long run.

Ensure there is no ongoing threat as soon as you get on the scene. Wait until it is obvious that you and your helpers are safe before entering.

2. Assessing the situation. Consider the following inquiries for yourself:

• What is the circumstance? Is there a mass transit crash here? Did a burning building crumble?

• How many wounds were there, and how bad? Are there a few or many victims? Exist other people who can assist?

• Are the victims gathered in one place or dispersed over a large area?

• Where could injured people be transported and treated locally?

• Are there any sites that could be accessed by vehicles to assist in transporting victims?

3. Requesting aid. Call 911 and report a mass casualty occurrence involving a multi-vehicle auto accident at the crossroads of Hollywood and Vine if contemporary medical treatment is available. At least seven injured individuals will need medical care. One vehicle is on fire, and people may be trapped inside other vehicles.

You have told the authorities that a mass casualty incident has happened, what kind of event it was, where it happened, an estimated number of patients who may need care, and the kinds of care or equipment that may be required—all in the space of three phrases.

If you're the only person there, grab your phone or another form of communication, and let people know what's going on and what resources (people and goods) you'll need. Contact the group medic if you don't have any medical training. The incident commander is the medical professional with the most experience.

4. Setup. Identify potential areas for additional assessment and treatment of patients with varying levels of disease (see below). Also, if there are any medical facilities, decide where the victims should enter and leave if they require immediate transport.

5. Start Primary triage. It or the initial round of triage, should be quick (30 seconds per patient, if possible), and injuries should not require significant care. It should concentrate on determining each patient's triage level. Quick assessments of breathing (or lack thereof), perfusion (adequacy of circulation), and mental status make up most of the primary triage evaluation. Aside from stopping major bleeding and clearing airways, only a very small amount of treatment is administered during the first triage.

Triage levels are typically based on color, albeit there is no universally accepted method for doing so:

Immediate (red tag) - The victim needs urgent medical attention and won't live without it (for example, a major hemorrhagic wound or internal bleeding). The priority is on this guy.

A delayed victim (yellow tag) needs medical attention within 2-4 hours. If injuries are overlooked, they could become life-threatening (for instance, an open femur fracture without significant bleeding), but they can wait until patients with red flags are treated.

Minimal (green tag)—Usually ambulatory and stable (the "walking wounded") but may require some medical attention (for example, broken fingers, sprained wrist).

The victim is marked as expecting (black tag) if they are either dead or not anticipated to survive (for example, open skull fracture with brain damage or multiple penetrating chest wounds).

Caregiver's understanding of the urgency of a patient's situation is made simple by knowledge of this patient tagging system. It should go without saying that many red and even some yellow tags will turn black in a power-down scenario without access to modern medical treatment. Without surgery, it will be impossible to save someone internally bleeding severely.

As an example, let's examine a mass casualty incident and discuss how triage tasks ought to be carried out.

First Priority: MCI Scenario

Here is our fictitious example: As you proceed down the street, an explosion is audible. You are the only person at the scene and the first to arrive. Roughly twenty people are injured, and blood is all over. How do you behave?

Assuming you have already assessed the scene's safety and applied the five S's, let's go on to the next step. There seems to have been an explosion from a bomb. As you can determine, there are no hostiles close by, and there is no sign of approaching ordnance. As a result, you and the other responders think that no one is in danger. The victims are gathered in one location, and the injuries are severe.

There are entrances and exits because the incident occurred on a major road. Your request for assistance and description of the scenario has prompted responses from multiple group members, including a former intensive care unit (ICU) nurse who communicates with all other group members who have medical training. Since the area is very open, you can designate sections for different triage categories. You can now begin.

You will shout, "I'm here to help everyone who can get up and walk and needs medical attention, get up and move to the sound of my voice," as loudly as you can. Follow me if you can help and are unharmed.

You're fortunate since thirteen of the twenty people, largely from the blast's outskirts, managed to sit up or at least attempt to. Eight moves to the place you specified for walking wounded, and the remaining ten can stand. These individuals are hobbling, have wounds and scrapes, and one has broken arms. Two tough but battered individuals join you. By recognizing the walking injured (those with green tags) and obtaining some urgent assistance, you have made your job as interim incident commander easier through communication. There are still eleven victims left.

Then you head to the victim lying on the ground closest to you. Start where you are as you move from one victim to the next. Triaging in this method will be quicker and more efficient than determining who needs help the most at a distance or by moving randomly.

Suppose you have "SMART" tags in your pack as a little cheat. SMART tags are practical tickets that let you identify a patient's triage level on the

fly. After determining a victim's triage level, you cut off a piece of the tag's end until you reach the right color, then wrap it around the patient's wrist.

The victims' foreheads could be marked with colored markers or numbers as an alternative. If you utilize numbers, code them as follows:

- Priority 1: Urgent/red
- Priority 2: Llate/yellow
- Priority 3: Low-impact/green
- Priority 4: Dead, pregnant, or black

Keep in mind that you are triaging rather than treating. Only major bleeding will be stopped, airways will be opened, and legs will be elevated in cases of shock as the only therapies in START. Keep your cool and let the patients know who you are and that you are there to help as you move from one to the next. You want to determine who will want assistance most immediately (red tags). You will evaluate the patient's breathing, blood flow, and mental state (RPM).

Are they breathing? Is your patient? If not, tilt the head back or, if one is accessible, place an oral airway. (Note: In current emergency treatment, the rule that the neck should not be moved until a cervical spine injury has been ruled out is temporarily disregarded in an MCI triage situation.) A victim is marked as black if they are not breathing but have an open airway. Tag red if the victim breathes after their airway has been reopened or if they are breathing more than 30 times per minute. Move to perfusion if the victim is breathing regularly.

Perfusion: Evaluate the blood flow or circulation's normalcy. (Wrist or neck) Pulse: Check for a pulse. Alternately, firmly push on the finger's pad or nail bed and immediately remove it. If there is adequate perfusion, it will change from white to its usual hue in less than two seconds. The term for this is "capillary replenishment time" (CRT). Tag red if there is no pulse or if it takes more than two seconds for the color to change back to pink. Checking the patient's mental status comes next if there is a pulse and the CRT is normal.

Mental state: Is the patient capable of responding to simple questions like "What's your name?" or "Open your eyes." Tag red if the patient is unconscious or confused but is still breathing and has normal perfusion.

Patients should be marked with a yellow or green tag if they can understand and follow instructions but cannot stand up. Keep in mind that some victims might not be able to hear you clearly due to the explosion.

If you just think "30-2-Can Do," it might be simpler to recall everything: Can Do: 30 (respirations), 2 (CRT) (Commands).

Always use the red triage level for the greatest priority if there is any question about the category. If you have substantial bleeding to stop, tag the patient as triage level red and move on to the next patient as soon as possible. The victim is marked red for each RPM check that does not adhere to the 30-2-Can Do criteria. For instance, tag red and stop the further investigation if the patient is not bleeding if they were not breathing but started breathing after you realigned the airway. If you detect shock, elevate the legs before moving on to the next patient.

Let's go back to our mass casualty incident now. Eight walking wounded have been located, and you've moved them to a specified spot. Two healthy helpers, a man and a woman are at your disposal. She is capable of taking a pulse. Let's assume that the only medical supplies you have with you are some oral airways and triage tags. Following are instructions on how to treat your ten victims in order of proximity.

Victim 1 is a male in his forties who complains of discomfort in his left leg, which is broken. His breathing is 24 breaths per minute, his pulse is strong, and his CRT is 1 second.

Pulse and CRT are normal, and respirations are within a reasonable range (less than 30). Since the patient expresses pain by complaining about it, their mental state is likely normal. This patient is marked yellow, meaning that they will still survive even if there is a reasonable (2-4 hour) wait. Pass on.

Victim 2: A woman in her fifties with bleeding mouth, nose, and ears. You try to sit up but cannot do so; your breathing rate is 20, your pulse is present, and your CRT is 1 second.

Despite having a serious head injury, the subject remains stable regarding breathing and blood flow. Tag red because she is damaged mentally (immediately). Pass on.

Victim 3 is a teen girl profusely bleeding from her right thigh; her respirations are 32, her pulse is thready, and her CRT is 2.5 seconds. She complies with orders.

One of the reasons to treat this patient at triage is that they are hemorrhaging quite a bit. High respirations and poor perfusion are present. You instruct your inexperienced male aid to apply pressure to the bleeding area while wrapping it with his shirt or a bandana. Mark red. You don't need to determine the patient's mental state because they are already marked red. You and your female assistant continue.

Another adolescent girl, victim #4, claims she cannot move her legs and has a minor cut on her forehead. Twenty breaths per minute, a robust pulse, and a one-second CRT.

The spinal injury is likely, but otherwise, stable and able to communicate. Yellow tagging Pass on.

Male in his twenties, victim number 5, with a head wound and no breathing. Repositioned airway, no improvement in breathing.

You will adjust his head and place an airway if he is not breathing. This does not revive his breathing. This patient is no longer alive. Black is tagged; continue.

Sixth victim: a 40-year-old man with burns to his face, chest, and arms. Twenty-two respirations, a 100-beat heartbeat, a 1.5-second CRT, and compliance with orders.

Despite having severe burns covering a substantial portion of his body, the victim is breathing normally, and his blood flow is normal. You tag yellow and continue since your mental health is unimpaired.

The seventh victim is a teenage male with several scratches and scrapes but is not bleeding. He claims he can't breathe, his respirations are 34, his radial pulse—the radial artery pulse—can be felt at his wrist, and his CRT is 2.5 seconds.

Although the victim doesn't appear to be in too much pain, she has poor perfusion and difficulty breathing. Although his mental state is unaffected, he probably has additional problems, including internal bleeding. Your red tag (due to respirations greater than 30 and impaired perfusion). Pass on.

Victim 8 is a woman in her twenties with burns on her neck and face. She has 22 respirations per minute, a heartbeat, and a CRT of one second.

This young lady is hurt, but she is otherwise stable and speaking. She can walk by herself and can stand up with assistance. She becomes Tag Green, another one of the wandering wounded. Move on and point her at the other green victims.

Victim 9 is an elderly woman who has had her right arm amputated below the elbow; she is bleeding heavily, breathing at a rate of 36, has no pulse in her other wrist, and her CRT is three seconds.

The victim is obviously in terrible shape, so you apply pressure on the bleeding area while using your shirt as a tourniquet. Tag red, then proceed.

Male toddler, victim number 10, many piercing wounds, no respirations. Repositioned airway; breathing begins. There is no radial pulse, a two-second CRT, and no response.

Despite your first concern that the infant is dead, you follow protocol and tilt his head back to clear his airway. Normally, you would be hesitant to do this due to the risk of a neck injury. One of the few situations where you can assess a patient without worrying about cervical spine injuries is when they have an MCI. You designate him red when, to your astonishment, he begins to breathe even without an oral airway. You apply pressure and wait for the additional help you initially sought to arrive if he is bleeding profusely from his wounds.

In less than 10 minutes, you just finished performing triage on twenty people, including the walking wounded. The ICU nurse who you initially phoned is among the first to come with assistance. You are relieved of incident leadership since you are no longer the medical resource with the most experience on the spot. For victims with yellow, red, and black tags, the nurse starts allocating locations where further triage and treatment can occur.

The casualties who require the most immediate care have been identified, but more must be done. Modern medical facilities typically arrive on the scene with ambulances, trained employees, and a wealth of equipment. But many of the victims have a poor prognosis in an off-grid environment. See

who you believe would survive without access to modern medical care by looking through our list of victims. There would be a significant risk of death from their wounds for many of the red tags and even some of the yellow tags.

PATIENT TRANSPORT

Stabilize the patient as much as possible before deciding whether to move them. This includes putting an end to any bleeding, splinting any orthopedic wounds, and checking the patient's breathing. If you can't guarantee this, think about having a group member obtain the things the patient needs before you relocate them. Have as many people as you can at your disposal to help you. The most crucial thing to remember is that you want to conduct the evacuation with as little stress on you and your patient as possible.

A stretcher is a crucial medical item to have in this situation. Although many high-quality commercially created stretchers are available, it is not very difficult to assemble improvised stretchers. Even an ironing board can function as a useful transportation tool. If possible, roll a person with a spinal injury onto a stretcher without bending their neck or back.

Another method is to use two long rods or poles with coats or shirts inserted through them to support the victim's weight. A rescuer could have their coat pulled off if they hold both poles. The coat is immediately shifted onto the poles as a result. Another method for creating a strong stretcher is to crisscross lengths of rope or paracord.

If you must drag someone to safety, take hold of their coat or shirt with both hands at the shoulders, letting their head rest on your forearms. Another option is to throw a blanket underneath the patient, grab the end of it close to their head, and pull. Again, try to avoid bending the torso or neck during transport if you are unsure of the severity of any spinal injuries.

If your patient can be carried, there are several options. The "fireman's carry" keeps the victim's torso steady and level. This procedure is much simpler if the patient is placed carefully, so they are lying on their stomach while asleep. By "hugging" the victim under their arms and supporting them

with your dominant leg placed between their bowed legs, you can lift them. Then, with your left hand, you would take hold of your right wrist and place it over your right shoulder. Put your right hand between their legs and around the right thigh while maintaining a straight back. They should end up with their body over your back and their right thigh resting on your right shoulder after you lift using your leg muscles. If you've done it well, their left arm and leg will hang behind your back. To put the least load on you, adjust their weight.

The "pack-strap carry" is an additional choice. Take hold of both arms and cross them on the front of your chest with your patient behind you. When squatting, keep your back straight and elevate the victim with your legs and back muscles. Lift the individual off the ground by bending a little so that they are resting their weight on your hips.

If you have the luxury of a helper, you might think about putting your patient, if they're conscious, on a chair and lifting them by the chair's back and front legs. This counts as a "sit-stretcher." One rescuer wraps their arms around the victim's torso from behind, while the second rescuer (facing away from the patient) holds the patient's legs behind each knee. This is another two-person carry. The patient is raised by crouching down and using the muscles in the legs.

When dragging or carrying a person, it's crucial to keep in mind the abbreviation B.A.C.K., which stands for the following:

Straight back. When the back is straight, greater weight may be safely supported by the muscles and discs.

Do not twist. Twisting can cause harm to joints.

Near the body, Reaching to pick up a burden puts greater tension on your muscles and joints, so avoid doing it.

Hold steady. Pressure on the discs and muscles increases with rotation and jerks.

BOOK 3

DENTAL CARE

CHAPTER 7

DENTAL CARE

Many of our readers are frequently taken aback that a survival medicine book includes a dental problems section. However, history teaches us that the majority of the patients who seek medical attention have dental issues. Medical professionals observed that oral symptoms were presented by half of all sick call patients during the Vietnam War.

To be clear, neither of us is a dentist, and practicing dentistry without a license is against the law and punishable by fines. Dental problems that are considerably worse than a bad tooth may result from a lack of professional training or expertise. If you can, seek out contemporary dental care.

Anyone who has tried to complete a task while also managing a severe toothache will attest to the drop in productivity brought on by the issue. It only makes sense that you should become familiar with fundamental dental care and techniques to tackle typical dental emergencies.

According to the survival medic's guiding principle, an ounce of prevention is worth a pound of cure. When it comes to your teeth, this way of thinking is extremely relevant. You can prevent your loved ones from suffering a

great deal of discomfort by establishing a basic dental hygiene routine (and yourself from many headaches).

The tooth's anatomy is very straightforward for such a vital component of our bodies. Thus it is important to examine. The "crown" is the portion of the tooth that is visible above the gum line. The "root" lies beneath it. The "alveolus" is the bony cavity that houses the tooth. Similar to how ligaments hold your ankle or shoulder together, teeth are attached to the alveolar bone utilizing them.

The tooth is made up of a variety of substances:

Enamel is the tooth's crown's exterior, hard and white.

Dentin is the bony, yellowish substance surrounding the pulp beneath the enamel.

Located in the middle of the tooth, the pulp is a connective tissue that contains blood vessels and nerve endings.

Bacteria are the main cause of dental disease. They're everywhere in your mouth, so anything lessens the number of bacteria there will lessen the likelihood of complications.

Although maintaining a daily brushing practice is important, you will eventually run out of toothbrushes. You can also apply some toothpaste with your finger in a circular motion as an option. You may also use a piece of cloth for this.

Another choice is to use the fibrous end of a twig you've been chewing on to clean your teeth. Any bent twig will do (living wood), so long as it is bendable. The other end of this twig can be used as a toothpick; therefore, it has two uses.

Commercially produced toothpaste will eventually become unavailable. Take baking soda into consideration as a cheap substitute. Compared to toothpaste made with produced silica, it is less abrasive to dental enamel.

You should wash your teeth or, at the very least, rinse your mouth after each meal and, especially, before going to bed. Infection risk will be reduced, and gum irritation will be reduced.

An efficient and affordable method would be to use a mixture of half water and half hydrogen peroxide (3 percent). Swish it in your mouth for a minute or two to get the best effect. Mouthwashes are sometimes overlooked when planning a survival kit, even though they are an excellent way to guard against dental problems. Higher hydrogen peroxide concentrations should be avoided because they can cause tongue burns.

Reliable flossing is another way to stop dental decay. Although some people might find it uncomfortable, many bacteria buildup occurs between your teeth. By flossing and then smelling the floss, you can demonstrate this. Due to the substantial amount of bacteria you just ejected, it will smell bad if you don't floss frequently. Removing unwanted things from between teeth, such as food particles, is another benefit of dental floss.

TOOTH DECAY

Understanding how germs cause dental disease is crucial. Your teeth are colonized by bacteria that dwell in your mouth. They typically gather around where the gums and teeth contact and the notches on your molars. The tartar or plaque that results from these colonies forming at the enamel's base is thick and erratic. Your gums and teeth are less healthy the more tartar you have.

These bacterial colonies eat with you when you eat; they digest the sugars you consume and release a poisonous acid. Your teeth's enamel will slowly dissolve as a result of this acid.

After the enamel has deteriorated, a "cavity" is produced. The process quickens and begins to produce pain because each tooth has living nerves when the cavity gets deep enough to infect the tooth's soft inside (the pulp). Once the germs have penetrated sufficiently deep into the nerve or the surrounding gum tissue, the cavity may become infected if it is not treated.

When your gums are inflamed, they will seem red and puffy and bleed when you wash your teeth. This condition, known as gingivitis, is quite typical in adults. Infection is a simple consequence of the condition's

deterioration. If the gums are affected, they could spread to the tooth roots or even the bone socket.

Once the tooth's root is affected, you could get a bad infection (abscess). This swelling of the gums and accompanying inflammatory fluid buildup can be extremely painful. Once you develop an abscess, you will require antibiotic therapy and possibly surgery to drain the collected pus. At this time, it's probably too late to save the tooth.

Toothache

Finding the problematic tooth is the first step in treating a toothache. Ask your patient to open his or her mouth so you can look inside. A toothpick and mirror are useful starter items. You will first look closely for any noticeable cracks or cavities. However, even if there isn't anything visible, you could still have extensive decay beneath the gum line or in between the teeth.

So how do you identify the problematic tooth if nothing is immediately apparent? Use something cold to massage the teeth where the pain is occurring. The damaged tooth will be extremely vulnerable to cold. Now contact it with a hot object. The tooth is possibly still salvageable if there is no sensitivity to heat.

Putting something hot on a tooth that is likely beyond saving will hurt a lot (only touching the tooth). After you turn off the heat source, it will hurt for around 10 seconds more. This is a result of irreparable nerve injury. You cannot feel hot or cold if the nerve is destroyed at the root level. However, even the slightest touch will be unpleasant.

If at all possible, contemporary dentistry aims to save every tooth. Extraction was the primary method of treating a bad tooth in the past—even as late as fifty years ago. We might need to use that tactic once more in a survival situation.

A severely decaying tooth will likely worsen if you put off extraction. Other teeth could get affected by decay, or it could result in septicemia, an infection that could enter your bloodstream and do serious harm.

The most crucial fact to be aware of is that tooth extraction can effectively treat 90% of dental crises.

What more should the medic's dental kit include except a mirror and a dental pick?

Health and Dental Kit

- Toothbrushes and floss.
- Dental or orthodontic wax, such as that used for braces; in a pinch, even a candle can do. A loose tooth can be secured to its neighbors using wax.
- A rubber bite block to maintain an open mouth. Thanks to this, you'll be able to observe the dentition and avoid getting bit. The task would be perfectly accomplished by one of those big pink erasers.
- Cotton swabs, Q-tips, and cloth sponges (cut into small squares).
- A material used as a temporary filler, such as Tempanol, Cavit, or DentempTM.
- Eugenol is a natural anesthetic found in clove oil. Eugenol should only be used on teeth as it burns the tongue, so keep that in mind.
- When combined with two drops of clove oil, zinc oxide powder can be used to secure loose crowns or create a temporary filling cement.
- Dental pick, dental mirrors, and tweezers.
- Forceps for extraction. These have curled ends and resemble pliers. There are variations for upper and lower teeth. Dental extractors come in various shapes and sizes, but you should have at least two of each: the number 151 or 79N for lower teeth and the number 150A or 150 for upper teeth. The number 23 can also be used for some molar extractions.
- Two elevators, one medium and one little. By separating the ligaments that keep teeth in their sockets, these tiny, chisel-like tools aid in loosening teeth. (A few components from a Swiss army knife might come in handy.)
- Painkillers and antibiotics; a dental scaler and dental pick to remove tartar.

Temporary Fillings

Crowns that are loose or missing fillings are common dental problems. Creating a combination that can quickly harden and offer a passable seal, these can be fixed, at least temporarily.

Make a paste by combining two drops of clove oil with zinc oxide powder. Apply it to the region after rolling it into a ball. In addition to reducing discomfort, it will harden.

Scrape any black deterioration with your dental pick, paying great attention to the cavity's margins. Your paste should cover the entire region that the initial filling once occupied. Scrape away any extra so the person can normally bite with their teeth closed. To locate spots where more cement has been applied, use carbon paper or paper that has been penciled on. The patient bites down so the carbon can darken the extra filling material.

It should be remembered that they are only short-term solutions. You'll probably need to repeat the filling procedure several times unless modern dentistry becomes once more accessible.

Dental Trauma

- Dental trauma can take many different forms. A person may have any of the following symptoms following an oral cavity injury:
- Dental fracture: A chipped or broken piece of a tooth
- a loose tooth or dental subluxation
- Dental avulsion: the total knocking off of a tooth

The number of layers exposed when a piece of a tooth is broken off determines what type of tooth it is. These are typically referred to as Ellis classes I, II, or III fractures by dentists:

Injury to Ellis I: Here, no pulp or dentin is visible because just the enamel has been fractured. This is only a concern if the tooth has a sharp edge. You can think about filling the edge smoothly or applying a temporary cement made of powdered zinc oxide and clove oil (eugenol).

Ellis II fracture: Under the enamel, this fracture reveals yellow or beige dentin. If possible, cover up this region since it can be sensitive. Since dentin is distinct from enamel, bacteria may infiltrate and infect the tooth.

The pulp and dentin are exposed in an Ellis III fracture, which can be very unpleasant. The pulp may bleed if it is exposed. Here, covers for protection will be most important, and the likelihood of lasting harm will be greatest.

When a tooth is broken, you should check the patient for any other injuries, such as those to the face, or the interior of the cheek, tongue, or jaw. Sometimes a tooth fragment gets stuck in the soft tissues and needs to be extracted using tools.

Because of the trauma, blood is probably present; therefore, completely rinse out the mouth's interior so you can fully evaluate the situation. Then, check if the damaged tooth is loose using your gloved hand or a cotton applicator. Remember to bring your bite block.

To lessen sensitivity in Ellis II dentin fractures, the exposed surface should be covered with a calcium hydroxide composition (marketed as DycalTM), a fluoride varnish, transparent nail polish, or a medical adhesive like DERMABONDTM (super medical glue). Give the patient pain medication and advise them to avoid hot and cold foods and beverages.

Ellis III fractures into the pulp are problematic for several reasons, including the potential for infection. Coverings made of calcium hydroxide on the pulp surface and additional temporary cement can be employed. Analgesics and antibiotics are appropriate possibilities; penicillin or doxycycline come to mind. Despite this, without contemporary dental intervention, the prognosis is not good.

The root is a particularly challenging dental fracture. Sometimes a fracture in the root is not visible until the gum is peeled aside. If this is the case, the tooth is routinely extracted as it is probably beyond repair (particularly in vertical fractures).

DENTAL SUBLUXATIONS AND AVULSIONS

A tooth that has been knocked loose but is still in its alveolar socket is said to have subluxated. To find out if the tooth is loose and how much, lightly push it with your gloved palm or a cotton swab. A minor trauma might not need any serious treatment.

To stabilize a loose tooth, it should be forced back into its alveolus (socket) and "splinted" to nearby teeth. Dentists utilize wire or other specialized materials for this, but you may use soft wax if a dentist is unavailable. Use enough wax to secure the protruding tooth to its front and neighboring rear teeth if possible. Put the patient on a diet of liquids and soft meals until the tooth appears to be well fixed to prevent further stress.

When a tooth is knocked out (an avulsion), the best-case scenario is that it was extracted intact, including the ligaments and root. Time is crucial in this situation for the potential efficacy of the treatment. The success of reimplantation decreases by 1% per minute when a tooth is not in its socket if it is not replaced or at least placed in a preservation solution. Don't try to replace baby teeth, please.

Hanks' solution is an effective tooth preservation solution for teeth that have been knocked out. For a while, it helps shield undeveloped ligament fibers. Commercially, this solution is offered under the name Save-a-tooth.

What to do if a tooth is knocked out is as follows:

Locate the tooth.

Avoid contacting the root when picking it up by the crown to prevent further injury to the ligament fibers.

Use water or saline to rinse the tooth free of dirt and debris. Scrubbing it will only cause the ligament more injury.

Place the teeth in milk, saline solution, or saliva if you don't have preservation solution (put it between your cheek and gum or under your tongue). This will prolong the life of your ligament cells longer than just drinking water.

You can try to reimplant the tooth if it has been out for less than 15 minutes. Use Hanks' solution (Save-a-Tooth) to clean the tooth and the empty socket before replacing it and covering it with cotton or gauze. The patient should then make a strong bite to maintain it. Placing your patient on a liquid diet after splinting it with soft wax to the adjacent teeth. To avoid infection, antibiotics like penicillin (veterinary equivalent: Fish Pen) or doxycycline (Bird Biotic) will be beneficial.

If the tooth has been out for longer than 15 minutes, you might need to soak it in Hanks' solution for around 30 minutes before replacing it. Make sure you have painkillers in your supplies because the longer you wait to replace the tooth, the more painful it will probably be to do so.

The ligament fibers dry out and die after a few hours of exposure to air, and the tooth is essentially dead at this point. It would be difficult to replace it at this point since the pulp would decompose as all dead soft tissue does. The dead tooth then scars down into its bony socket, behaving like a dental implant, and may even turn dark in color. Ankylosis is the term for this.

It's crucial to understand that even if the ligament survives the lesion in mature permanent teeth, the pulp does not. As a result, even your greatest efforts might not succeed if there is no access to contemporary dental care to remove dead tissue. Your patient can be in more danger than just losing a tooth if there is a serious infection in the dead pulp.

Even while going without a dentist occasionally might be uncomfortable, most dental crises would leave us with few other options. In such cases, the preferred course of therapy may need to be tooth extraction.

DENTAL EXTRACTION

One day, as a medical professional, you might have to pull a tooth because it is infected. Tooth extraction is not a pleasant procedure in its current form, and it will be even less so in a long-term survival scenario with no power and few resources. A permanent tooth can't usually be pulled out by merely wriggling it with your gloved hand or by tying a thread to the nearest doorknob and slamming that. However, anyone planning to provide medical care in the wake of a severe tragedy will need to be familiar with the method.

Your ability to complete the process will increase with proper placement. For an upper extraction, the patient should be tilted at a 60-degree angle to the ground (also called a maxillary extraction). The medic's elbow should be level with the patient's mouth. A lower extraction, also known as a mandibular extraction, requires the patient to sit upright and have their

mouth below the doctor's elbow. Standing to the right of the patient for right-handed medical personnel and the left for left-handed personnel. Standing in front of the patient when doing upper and the majority of front lower extractions is advisable. Some people like to stand behind the patient when extracting lower molars.

Wash your hands first, then wear gloves, a face mask, and eye protection. Keep the region around the tooth as dry as possible to see what you're doing. There will be some bleeding, so you might wish to wrap the tooth in cotton balls or pieces of rolled gauze that you can remove and replace as needed.

The ligaments, fibrous connective tissue, keep the teeth in their sockets. To release the tooth, these ligaments must be cut. An elevator—which resembles a small-headed flathead screwdriver or chisel—is used to do this.

Dental extractors and elevator

Apply little pressure around the tooth in question and between the gums to descend to the root region. The tooth ought to get loose as a result. There may be bleeding.

Grab the tooth as far down the root as you can with your extraction forceps. This will increase your chances of successfully extracting the tooth the first time. After first loosening the tooth with your elevator, apply pressure straight downward for the upper teeth and straight upward for the lower teeth for the front teeth (which have one root). When removing teeth with multiple roots, such as molars, shaking the tooth will aid in further loosening it. When a tooth becomes loose, extract it away from the tongue and toward the cheek (or lip if it's a front tooth). All teeth benefit from this except the backmost lower molars (wisdom teeth).

Use the opposite hand to support the mandible (lower jaw) for lower extractions. You will need to extract the remaining root if the tooth breaks during extraction (this happens frequently). To assist, press the root outward and loosen it further; use your elevator.

Then, apply gauze to the bleeding socket and ask the patient to bite. To stop excessive bleeding, cut an item called ActCel hemostatic gauze into small

squares, moisten them, and apply them directly to the bleeding location. In 24 hours, it ought to solidify into a gel that may be removed with water.

Occasionally, if bleeding is severe, a suture may be needed. In this situation, use 4-0 chromic catgut absorbable suture material. N-butyl-2-cyanoacrylate also referred to as veterinary "super glue," was successfully employed in a recent study conducted in Cuba on more than 100 patients to control both bleeding and discomfort. In some situations, DERMABOND adhesive has been applied in US emergency rooms for short-term relief. For 24 to 72 hours, stay away from hot beverages and crunchy meals.

Over the next few days, discomfort, bruising, and swelling are expected. Applying cold compresses will reduce swelling for the first 24 to 48 hours; after that, warm compresses can improve jaw stiffness. Consider medications as well because the infection is another potential problem. To lessen trauma to the area, the patient should be placed on a diet of liquids and soft foods.

Use ibuprofen, acetaminophen (Tylenol TM), or another non-steroidal anti-inflammatory drug to treat pain (or stronger meds, if you have them). Avoid taking aspirin since it can prevent blood clotting in the socket. Don't smoke, spit, or even use straws because the blood clot is there to protect you; doing so could develop alveolar osteitis, sometimes known as "dry socket," which is a painful ailment.

In this scenario, the clot will have disappeared, and the person's breath may smell bad. Here, antibiotics and warm saltwater gargles are helpful, and a water solution infused with a tiny bit of clove oil may help to lessen the discomfort. Avoid using too much oil because it could cause tongue burns.

To survive over the long term, tough choices must be made. The survival medic will also need to serve in the capacity of dental care provider if modern dentistry is rendered obsolete due to a mega-catastrophe. If you have access to contemporary dental care, you should never perform a dental procedure on someone.

BOOK 4

INFECTIONS

CHAPTER 8

RESPIRATORY INFECTIONS

Most of us cannot completely escape the odd respiratory infection, even with today's advanced medical technology. In a severe disaster, it would be very simple for your entire town to contract colds, sinusitis, influenza, or even pneumonia if the sanitary protocol wasn't strictly followed. Any one of 200 viruses can cause the common cold. The viruses that cause influenza to belong to the influenza A, B, and C categories (mostly A). Flu pandemics have claimed the lives of more than 100 million people throughout history.

Most influenza-related deaths are not brought on by the virus but rather by bacterial pneumonia, a secondary infection that attacks an already compromised immune system.

Most viral particles that cause respiratory illnesses typically propagate them. Many organisms that do so can survive for up to 48 hours on everyday home items like doorknobs and kitchen worktops. When someone sneezes, contagious virus particles can quickly move 4-6 feet.

Upper and lower respiratory infections are the two main categories of respiratory problems. Anything above the vocal cords (larynx) is the upper respiratory tract. The diagnosis will frequently be connected to the damaged upper respiratory system component. This is how it goes:

- nose—rhinitis
- throat—pharyngitis
- epiglottis—epiglottitis
- tonsils—tonsillitis
- sinuses—sinusitis
- voice box—laryngitis
- ear canal—otitis

The lower windpipe, the airways (together referred to as "bronchi"), and the lungs themselves make up the lower respiratory tract. In wealthy nations, respiratory infections like bronchitis and pneumonia are the most prevalent source of infectious diseases.

Typical N95 mask

Fever, coughing, sore throat, runny nose, nasal congestion, headaches, and sneezing are some common cold signs. Lower respiratory infections, such as pneumonia and some types of bronchitis, can cause symptoms like coughing up phlegm and having a "productive" cough, high fever, shortness of breath, weakness, and exhaustion. Symptoms of most respiratory infections appear 1-3 days after exposure to the causing organism. If upper, they should last 7–10 days; if lower, they should last a little longer.

Colds vs. Influenza

It's important to recognize the distinctions between the common cold and influenza when making a diagnosis. Although the symptoms are similar, they vary in severity and frequency.

To determine what you're most likely dealing with, check out the list below:

Symptoms	Cold	Influenza

Fever	Rare, Low	Common, High
Headache	Rare	Common
Nasal congestion	Common	Occasional
Sore throat	Common	Occasional
Cough	Mild	Severe
Aches and pains	Common	Severe
Fatigue	Mild	Severe

If used within the first 48 hours following the onset of symptoms, antiviral drugs like oseltamivir (TamifluTM) can lessen the duration of influenza infection. Antivirals have less of a therapeutic impact after the initial 48 hours.

For colds, focus your treatment on the affected area, such as painful throat lozenges for pharyngitis or nasal congestion medication for runny noses. Ibuprofen or acetaminophen will reduce fevers and muscle aches. Additionally, regular hydration and steam inhalation provide some symptomatic relief. We describe many natural therapies in the following chapter of this book, which are also helpful in relieving symptoms.

Although viruses typically cause upper respiratory infections, a bacterium known as beta Streptococcus can also cause some sore throats (strep throat). These patients are suitable for antibiotics because they frequently have tiny white spots on the tonsils, back of the throat, or both. Amoxicillin (veterinary equivalent: Fish Mox) or Keflex (Fish Flex) are among the medications of choice for individuals who are not allergic to penicillin medications. Drugs from the erythromycin (Fish Mycin) family are beneficial for people who are allergic to penicillin.

However, antibiotics or other antibacterial treatments for upper respiratory infections are typically not advised. Since antibiotics have been abused to address these issues, certain organisms have resisted the more widely used medications. Some older antibiotics are now practically worthless for treating numerous diseases due to resistance.

The most frequent infectious disease-related cause of death in developed nations is lower respiratory infections like pneumonia. Bacteria or viruses

may bring these on. Many doctors use antibiotics more frequently to treat these infections because they are dangerous. However, since viruses typically cause bronchitis, antibiotics won't help. If a lower respiratory infection doesn't go better after many days of treatment with the typical drugs for upper respiratory infections, antibiotics could be necessary.

Even with regular therapy, the patients at risk will gradually appear to have worsening shortness of breath or thicker phlegm.

Upper and lower respiratory infections are distinct from asthma, a disorder in which exposure to a substance causes the airways to tighten like a spasm. As a result, I start breathing loudly (wheezing). Asthma can develop as an allergic reaction or be linked to certain respiratory illnesses, like infantile "croup." Different medications, such as airway "openers" and epinephrine, which are not often used to treat colds or the flu, are used to treat asthma.

To stop people with respiratory diseases from infecting others, practicing good respiratory hygiene is crucial. This not only benefits you and your family, but it also exemplifies societal responsibility. Utilize the following procedures to stop the spread of respiratory infections.

Those that are ill:

- Use tissues to cover your mouth and nose before properly discarding the tissues.
- If you cough frequently, wear a mask. The ill person should wear a mask, even if others care for them (healthcare personnel should use N95 masks).
- If possible, stay at least 4 feet away from other people (the average distance droplets will spread).
- Caregivers:
  - Wash your hands thoroughly both before and after contact. Hands should be cleaned with alcohol-based hand sanitizers or washed with soap and warm water for 15 seconds.
- Use a suitable disinfectant to wipe down all potentially contaminated surfaces, such as kitchen counters or doorknobs (dilute bleach solution will do).
- If the sick person has a high fever, isolate him or her in a designated quarantine location.

When treating the patient, always wear gloves. Avoid self-medicating, especially with antibiotics, unless access to proper medical treatment is impossible.

Many of the tactics above and remedies will effectively treat respiratory infections, but what if a catastrophic disaster prevents access to or the production of modern pharmaceuticals? In that case, we need to look no further than our backyard and, if we were savvy in our planning, our medicinal garden. We must consider organic compounds that could improve the body's immunological response and relieve various respiratory problems.

Regular consumption of antioxidants like vitamin C, vitamin e, and others is thought to lessen the frequency and severity of respiratory infections. Numerous research supports its value, even though just one study found a reduction in the annual length of respiratory virus-related symptoms by one day. Despite this, any strategy for storing food for survival should include antioxidant support for the immune system.

Most natural medicines treat specific symptoms, including fever or nasal congestion. The immune system is said to be stimulated by several alternative treatments for different respiratory illnesses. Think about the subsequent essential oils:

- Geranium
- Clove Bud
- Tea tree
- Lavender

You would practice a technique known as direct inhalation therapy to use these oils. On the palm of your hand, apply two or three drops. Rub your hands together to warm the oil, and then put your hands near your mouth and nose. Take three to five slow, deep breaths. Repeat the exercise after two minutes while remaining calm and breathing properly. Remove any extra oil from the chest and throat by wiping.

Many herbs can be consumed as tea and may be beneficial. Elderberry, Echinacea, licorice root, chamomile , goldenseal, peppermint, and ginseng are well-known remedies for general respiratory support. Fresh cinnamon, garlic and onion oil, and cayenne pepper in powder form have all been

reported to have antibacterial properties. Other alternatives include lemon, apple cider vinegar, and raw, unprocessed honey. These ingredients are frequently added to one of the aforementioned herbal teas.

There are several effective therapies for certain cold and flu symptoms and general ones. For example, take into account herbal drinks created from the following herbs to treat fever:

- Echinacea
- Licorice root
- Yarrow
- Fennel
- Catnip
- Lemon balm

Salicin, the active component of aspirin, is known to be found in the underbark of willow, poplar, and aspen trees. Remove the outer bark in multiple strips, then use the green underbark to prepare a tea. It ought to reduce fever in the same way as aspirin does.

Consider utilizing direct inhalation therapy (described above) or salves with the following essential oils to treat the congestion that most respiratory illnesses cause:

- Eucalyptus
- Rosemary
- Anise
- Peppermint
- Tea tree
- Pine
- Thyme

Steam is a different inhalation technique that can deliver the herbs above or even conventional pharmaceuticals. Inhaling steam is helpful for many respiratory conditions and is simple to do. Simply add a few drops of essential oil to some steaming water, then lower your face into the steam to breathe it in. To focus the steam, wrap a towel around your head.

Herbal teas made from the following relieve congestion:

- Licorice root

- Peppermint
- Anise
- Cayenne pepper
- Sage
- Stinging nettle
- Dandelion

Add honey and drink 3–4 times a day as necessary. Fourteen teaspoons of fresh horseradish taken orally three times a day help to expand airways. Both conventional and alternative healers employ plain sterile saline solution, administered either nasally or in a "neti pot."

Use salves containing the following essential oils for cold-related aches and pains:

- St. John’s wort
- Eucalyptus
- Peppermint
- Rosemary
- Camphor
- Lavender
- Arnica (dilute)

Teas made from the following are thought to relieve muscle aches:

- Passionflower
- Chamomile
- Valerian root
- Willow underbark
- Ginger
- Feverfew
- Rosemary

sip warm tea with raw honey 3 times a day.

Traditional treatments for the occasional sore throat include ginger, Tilden flower, sage teas, honey, and garlic "syrups." They should be warmed up and combined with honey and sometimes lemon several times a day. Warm salt water gargles will also provide relief. To lessen unpleasant swallowing, licorice root and honey lozenges are very beneficial.

Although the herbs discussed in this book have all been proven beneficial, it's vital to remember that each person's response to a given herbal product is unique. Additionally, several variables, like rainfall, the state of the soil, and the time of harvest, may affect essential oil quality.

THE PROTECTIVE MASKS GUIDE

Infectious infections have always been a common occurrence throughout human history. It has been known since the Middle Ages that some illnesses can spread from person to person through the air or by touching human fluids. As a result, medical staff members have worn masks to limit exposure.

This makes sense for reasons other than self-interest: There won't be many people with medical training available to help a group or community in a survival crisis. Only two doctors were present for every 100,000 people in the nations where the 2014 Ebola pandemic occurred. As a result, the doctor is a useful asset. It would be unfair to those who depend on them if they fell ill.

In the past century, the basic surgical mask hasn't undergone many alterations in terms of look. You've probably seen pictures of people wearing them in epidemic-affected areas. If you have the flu or a cold and are going out in public, it is considered socially appropriate to wear them in Asia. Face masks also serve as a helpful reminder for individuals to avoid touching their mouths and noses, a common way for germs to spread.

You should include enough masks (and gloves) in your medical storage if you will be caring for your family in circumstances when access to contemporary medical treatment is impossible. Without these things, you and the rest of the family could contract an infectious disease.

Standard "medical masks" come in various protection levels depending on the fit and barrier quality; three-ply masks, which are the most popular, are more "breathable" than six-ply masks, which are probably more of a barrier. To create a barrier against infectious droplets, a tight fit is essential.

The N95 respirator mask is an improvement over the standard mask. A family of disposable respirators known as N95 masks has an efficiency rating of at least 95% against particles larger than 0.5 microns. While they are helpful against a variety of pollutants, they are not completely protective. N99 masks (99%) and N100 masks (99.7%) are higher-level masks, although they are more expensive. The N stands for non-oil-resistant; other options include the R95 and P95 masks, mostly used in industrial and agricultural settings.

Many of these masks contain an "exhalation valve" square or round in the middle, which aids breathing. However, they do not protect against gases like chlorine and do not shield the eyes. You would require a "gas mask" for this, albeit even these do not shield the wearer from contamination by toxins that are absorbed via the skin.

So what would be a sensible course of action? Standard and N95 masks are required as part of your medical supplies. Because the masks should be thrown away after usage because they will become contaminated, I would advise purchasing a large quantity of each. Face shields and hoods should be fitted in cases of particularly lethal infections like Ebola.

There are no set rules regarding what people wear in the sick room. For those who are ill, I advise using the usual masks to stop the spread of illness through coughing and sneezing (which can send air droplets several feet). Give the carers the N95 masks. You will provide the greatest level of protection to individuals who are most vulnerable to exposure in this way. Always remember that protecting yourself and the group's healthy members comes first. Contagious individuals should be kept apart, and every aspect of cleanliness should be carefully observed. Other precautions include having sufficient masks, gloves, aprons, eye protection, and antiseptics.

THE EFFECTIVE SICKROOM

Normally, we have the luxury of state-of-the-art medical facilities and cutting-edge methods to keep sick patients away from healthy individuals. Most of these benefits will become extinct if we find ourselves cut off from

society due to a tragedy, and we will be forced to deal with medicine much like it was in the eighteenth century.

However, we have the advantage of understanding sterilization and how contagious diseases are spread, giving us an advantage over our ancestors. The medically prepared should be able to construct a "sick room" or "hospital tent" using this knowledge. This will lessen the possibility of infectious diseases spreading rapidly.

Whether you are at home or on the path, you should have a plan in place for a place where the sick and injured can receive care. Establish a sick room in your home if you plan to remain there. It should be at one end of the home, have a door that can be closed, and have one or two windows to enable light and ventilation. Pick a hospital tent in the wilderness, and set it up outside your camp. Making a plan before a huge calamity is crucial since, if you don't, you'll inevitably have to eject someone from their room or tent. As a result, at a moment when everyone must work together to survive, you might expect resentment.

To separate the sick from the healthy, you'll need to create a temporary wall, like a plastic sheet, if you don't have a spare room or tent. Even if you have a separate sick room, it can be a good idea to put this over the door for extra security. If possible, keep individuals with injuries apart from those with contagious illnesses like the flu or pneumonia.

In a power outage, air-conditioning ducts will be practically ineffective and could seriously endanger the rest of your group. Wrap them up. To reduce the concentration of airborne infections, keep windows or vent flaps open unless it is exceptionally bad outside.

The room should have only a work surface, an exam area, and beds. Avoid touching any carpets or sofas with cloth surfaces since they can contain germs. It could be best to wrap even the bedding for contagious people in plastic. The more surfaces that can be quickly cleaned or sanitized, the better. (Try doing it on a carpet every day!) Even if all you have is a 5-gallon pail of bleach solution, you should have a mechanism to remove waste from your bedridden patients. Provide closed containers for discarded sick room supplies.

It would be highly beneficial to have a station with masks, gloves, gowns, and disinfectants next to the tent or room entry. You'll need towels that the caregiver should only use, along with a basin with water, soap, or another disinfectant. Those with infectious illnesses should only be cared for by one individual.

Purchase plenty of masks, gloves, and gowns. Gowns can be bought commercially, can be constructed of plastic coveralls, or even can be full-body aprons. Gauze, tourniquets, and war dressings are frequently considered part of a medical supply kit, but you also need sets of linens, towels, pillows, and other goods specifically for the sick room. Keep these items apart from the beds, toiletries, and food that the healthy family members use.

Cleaning products ought to be included in the list of medical preparedness supplies. Everyday cleaning of the sickroom is required. Use disinfectants, soap, and water to clean surfaces that might be contaminated. Bleach diluted 1:10 in water would work well for this. Doorknobs, tables, sinks, toilets, counters, and toys must be cleaned and sanitized. Bed linens and towels should be washed frequently; if necessary, boil them. After handling patient bedding or clothing, immediately wash your hands or otherwise disinfect them. The same holds for other items used to care for the patient, such as dishes and cups. Anything brought into the sick room for medical purposes should remain there.

For sick room patients, it's also crucial to provide them with a noisemaker of some kind so they can let you know when they need assistance. They will feel less anxious and more confident, which you will notice if they are in difficulty due to this.

FOOD-BORNE AND WATER-BORNE ILLNESS

Drinking water and eating food are now much safer than before, thanks to modern water treatment and disinfection methods. In the past, contaminated water was the cause of several fatalities. Today, epidemics of infectious diseases continue to occur in impoverished nations. Therefore, it stands to reason that sanitary problems will likely arise following a disaster.

Any unsterilized water or food that has not been thoroughly cleansed and prepared could put the health of an entire neighborhood in danger. You will be responsible as the medic for ensuring that the water is safe to drink and that the areas where food is prepared are clean.

Sterilizing Water

Floods, interruptions in the water supply, and several other unforeseen circumstances can taint the water. A dead raccoon can contain harmful bacteria upstream from where you get your water supply.

The purest alpine brook might include protozoa, a type of parasite that can spread sickness. An organism that damages you once it establishes a home in your body is known as a parasite. Giardia and Entamoeba parasites are frequent disease-causing agents; they can infect trekkers in the most remote wilderness areas.

If the water is hazy when you start, it is because it contains a lot of minute trash particles. On the market, numerous top-notch commercial filters in a range of sizes handle this. An alternative method for creating your own particulate filter is to use a piece of 4-inch-wide PVC pipe and insert two or three layers of gravel, sand, zeolite, or activated charcoal, separating each layer by pieces of fabric or cotton. Run hazy water through it to see clear water come out the other side once it has been cleaned and is ready to use.

This kind of filter will remove particulate matter whether it contains activated charcoal or not, but it won't eliminate germs and other diseases. It's crucial to have a variety of options for sanitizing water to get rid of microbes, such as the following:

1. Boiling: Use a heat source to bring your water to a rolling boil. Some bacteria might endure extreme heat, but they are uncommon. Even more comprehensive would be to use a pressure cooker.

• Chlorine A 3–8 percent solution of sodium hypochlorite is found in household bleach, sold for use in washing clothes. Bleach has a strong history of successfully eradicating bacteria, and 8–10 drops in a gallon of water will suffice. You probably won't taste any different if you're used to drinking city-treated water.

• Iodine tincture (2 percent). Per gallon of water, add 12 to 16 drops. For this, an eyedropper is helpful. Before drinking water sanitized with bleach or iodine, you should wait 30 minutes.

Ultraviolet radiation The sun will render microorganisms inert. It only takes 6 to 8 hours in direct sunlight (best on a reflective surface). Fill your transparent gallon bottle to the top, then give it a good 20-second shake. The oxygen released from the water molecules will aid the process, enhancing the flavor.

STERILIZING FOOD

Anyone who has consumed food that has been out too long likely has had an experience where they later regretted it. The key to disease prevention is thoroughly cleaning surfaces used to prepare meals.

A surface for preparing meals is your hands. Before making your dinner, properly wash your hands. Before utilizing them, other surfaces used for food preparation, such as worktops, cutting boards, plates, and cutlery, should also be washed with water and soap or a weak bleach solution. Even though not all germs are killed by soap, it does assist in removing them from surfaces.

Before eating, wash your fruits and veggies under running water. Food made from plants cultivated in soil may include disease-causing microorganisms, and that's before fertilizers like manure are added. If the fruit has a rind, you are not protected; the organisms on the rind will get on your hand and spread to the fruit after you peel it.

The fluids from raw meat are infamous for contaminating food. Meats should be prepared separately from your produce. Make sure that meat reaches the proper safe temperature and stays there consistently until cooked, depending on the type of meat. To be sure of this, use a meat thermometer. The safe cooking temperature for various types of meat is listed below.

Beef:	145 degrees

Pork:	150 degrees
Lamb:	160 degrees
Poultry:	165 degrees
Ground meats:	160 degrees
Sauces and gravy:	165 degrees
Soups with meat:	165 degrees
Fish:	145 degrees

DIARRHEAL DISEASE AND DEHYDRATION

An increase in infectious diseases, none of which will be more prevalent than diarrhea, is likely to result from deteriorating sanitation and hygiene. An increased frequency of loose bowel movements is referred to as diarrhea. Three liquid stools in a row are cause for concern and alert you to the possibility of dehydration. Water loss from the body is dehydration. If severe, it may result in several chemical imbalances that are potentially fatal.

Common ailments like diarrhea may go away on their own if you only allow your patient clear drinks and advise them to abstain from solid food for 12 hours. However, the following signs and symptoms that may appear along with diarrhea could indicate a more serious condition:

- A fever that is at least 101 degrees
- Moderate to severe dehydration
- Blood or mucus in the stool
- Black or grey-white stool
- Severe vomiting
- Major abdominal distension and pain
- Diarrhea lasting longer than three days

These signs and symptoms could indicate a severe infection, intestinal bleeding, liver malfunction, or surgical problems like appendicitis. The risk that the affected person won't be able to control his or her fluid balance will also rise due to these symptoms.

Since the dawn of history, there have been outbreaks brought on by germs that produce diarrhea. One extremely dangerous illness that was widespread in the past and might be again in the hazy future is cholera. Abdominal pain and a lot of watery diarrhea are symptoms of this infection.

Another extremely severe sickness brought on by tainted food or drink is typhoid fever. Like cholera, it is marked by painful, bloody diarrhea, and throughout history, it has been the source of deadly outbreaks. Typhoid fever often rises every day, and after a week or more, you might see a blotchy rash and nosebleeds on their own. From there, the patient's condition gets worse.

Dehydration is the final result of untreated diarrheal disease and the most common cause of mortality. The average adult needs 2-3 liters of fluid daily to maintain balance since the body is 75% water by weight. Children are more susceptible to dehydration than adults are: Every year, 4 million children in developing nations pass away from causes such as diarrheal dehydration and other causes.

Rehydration

Dehydration is treated by fluid replacement. The first line of treatment is oral rehydration, but if it is unsuccessful, it may be necessary to inject fluid intravenously, which calls for specialized tools and knowledge. Give your tiny patient amounts of clear fluids to start every time. Water, clear broth, gelatin, Gatorade, and Pedialyte are a few examples of clear fluids that are simpler for the body to absorb.

Commercial oral rehydration packets are available, but you may make your own fairly quickly at home: To 1 liter of water, add the following:

- 6–8 teaspoons of sugar (sucrose)
- One teaspoon of salt (sodium chloride)
- ½ teaspoon of salt substitute (potassium chloride)
- A pinch of baking soda (sodium bicarbonate)
- For children, use 2 liters of water.

Juices, puddings, and thin cereals like grits or cream of wheat can be added to the diet as the patient demonstrates a capacity to handle these liquids.

Given that some people are lactose intolerant, it is advisable to avoid milk. Giving solid patient food is possible once they can consume thin cereals.

The BRAT diet is a well-liked method for rehydrating quickly after dehydration in kids. The following foods are part of this diet:

- Bananas
- Rice
- Applesauce
- Toast (plain or crackers)

The fact that these foods are bland and well-tolerated is a benefit of this tactic. Additionally, they reduce intestinal motility, which slows down water loss by reducing how quickly food and fluids travel through your body.

Naturally, some medications can be helpful. Diarrhea can be treated with Pepto-Bismol and Imodium (loperamide). Although they don't treat infections, they will reduce the frequency of bowel motions and help you save water. These medications are available over-the-counter and are simple to get. They can be taken as tablets and last for years if stored properly.

ZofranTM is an effective antiemetic medication for vomiting (ondansetron). Typically, doctors won't hesitate to write this prescription, especially for individuals leaving the country. Of course, acetaminophen or ibuprofen are effective for treating fevers. More water is lost when the fever is greater. Therefore, anything that lowers fever will benefit someone's level of hydration.

It has been claimed that a variety of natural compounds are beneficial in certain circumstances. These are some examples of herbal remedies:

- Blackberry leaf
- Raspberry leaf
- Peppermint

Every two to three hours, have a cup of the tea you made with the leaves.

It is believed that consuming one teaspoon of raw honey and half a clove of smashed garlic four times per day will have an antimicrobial impact in some cases of diarrhea. Abdominal cramps can often be relieved with ginger tea, an age-old remedy.

You can attempt antibiotics or antiparasitic medications as a last option to treat dehydration from diarrhea (particularly if there is also a high fever). Use twice-daily doses of ciprofloxacin, doxycycline, and metronidazole until the stools are less watery. Some of these are available without a prescription in the veterinary version (discussed later in this book). The main negative effect of these medications is typically diarrhea; therefore, they should only be taken as a last resort.

CHAPTER 9
INFECTIONS

In the last section, we talked about illnesses like body lice and diarrheal sickness, which typically result from bad sanitation and hygiene. Numerous additional bacterial, viral, and parasite illnesses can be just as harmful but may not necessarily be related to sanitation and hygiene. For instance, anyone can develop appendicitis, regardless of their cleanliness or the surroundings at their retreat. A single ingrown hair can cause an abscess or boil.

It's amazing how well our bodies can fight off illness. No organ is immune to infections, though, so a good doctor must be able to identify and treat these ailments early on. We review some of the more typical ones you might encounter in this section.

APPENDICITIS AND SIMILAR CONDITIONS

Abdominal pain may be caused by several infections, some of which can be treated medically and others surgically. Appendicitis is a reasonably frequent condition that could be fatal in a long-term survival scenario, especially for young people. Approximately 8 out of every 100 people will develop appendicitis (appendix inflammation).

Anyone can get appendicitis, but persons under forty are more prone to get it. The appendix is a 2-4 inch long segment of tubular, worm-shaped tissue that attaches to the intestine in the bottom right side of the abdomen. This structure has a pouch-like interior that opens to the big intestine. The appendix's function is uncertain; however, one idea holds that it is an example of a "vestigial" organ, meaning that it is a no longer-useful relic from our evolutionary past.

When the appendix is obstructed, or bacteria are transferred from other parts of the body, problems might occur. The appendix may become infected or inflamed due to the bacteria's growth, or it may even become pus-filled. The appendix may rupture and discharge infectious material into the abdominal cavity if the issue is not handled. This leads to peritonitis, which can spread across the entire abdomen and become very serious. Before the invention of antibiotics, infections frequently resulted in death.

After 12 to 24 hours, appendicitis progresses from a vague soreness near the belly button to the lower right quadrant of the abdomen. About two-thirds of the way down from the belly button to the top of the right pelvic bone is this region, sometimes known as "McBurney's Point."

Other likely symptoms may include the following:

- Nausea and vomiting
- Loss of appetite
- Fever and chills
- Abdominal swelling
- Pain worsening with coughs or walking
- Difficulty passing gas
- Constipation or diarrhea

Patients may struggle to use their legs since doing so causes their abdominal muscles to contract. Other common sign and symptom of appendicitis is fever, nausea, and vomiting.

Press down on the lower right abdomen to make the diagnosis. It will probably hurt your patient. What is referred to as "rebound tenderness" may indicate a potential ruptured appendix. In this situation, pressing down will hurt, but taking your hand away will hurt far more.

From the moment you make the diagnosis, the patient should only be allowed modest amounts of clear liquids. Although surgical removal of the appendix is curative in this case, it would be challenging to perform without access to contemporary medical equipment.

If contemporary surgical care is not available, your sole option may be to give the patient oral antibiotics to treat an early infection. Naturally, intravenous medicines like cefoxitin work better than oral antibiotics like cephalexin (veterinary equivalent: Fish Flex). In studies conducted in the United Kingdom, early (uncomplicated) cases of appendicitis were treated with some success by intravenous antibiotics.

If intravenous antibiotics or surgical intervention are not possible, a combination of ciprofloxacin (veterinary equivalent: Fish Cin) and metronidazole (Fish Zole) is an alternative. It can also be used by people who are allergic to penicillin. Even though recovery is likely gradual, if therapy is started early enough or the body has built a wall around the infection, recovery may still be feasible.

Is it possible to have surgery when general anesthesia is not an option? Most procedures cannot be done without putting the patient's life in danger. However, surgeons in impoverished nations have performed appendectomies under local anesthetic.

You must be confident that you have an inflamed appendix before considering surgery to treat the condition. Sometimes, various medical conditions appear with overlapping symptoms, so you'll need to perform detective work to tell one from the other. Making the "differential diagnosis" is what this is known as.

The following conditions are just a few of the many that might mimic appendicitis.

Tubal Pregnancy

A tubal pregnancy should be ruled out in females of reproductive age. One of every 125 pregnancies experiences this problem. In this circumstance, a fertilized egg implants in the fallopian tube rather than the uterine wall, which is where it should be. It expands in this narrow canal until its size

causes the tube to explode. This frequently results in pain and internal bleeding; a tubal pregnancy was frequently fatal in the past.

Instead of an infection, blood is the cause of the pain in this instance. Have some pregnancy tests in your medical supplies if your family or survival group includes women of childbearing age. Till proven otherwise, a woman with a missing period, a positive pregnancy test, and excruciating pain on one side of the lower abdomen are tubal pregnant.

Diverticulitis

In contrast to appendicitis, diverticulitis typically affects elderly adults. Diverticula are tiny pouches that mimic the inner tube of a vintage vehicle tire and are found in the big bowel. Similar to how the appendix can become clogged, these sites could help also. Although the symptoms of diverticulitis are remarkably similar, most people will report pain in the lower left quadrant as opposed to the right.

Pelvic discomfort can also be a symptom of other inflammatory bowel diseases, including Crohn's disease or ulcerative colitis. Steroids are frequently used to treat them, although surgery may also be necessary.

Inflammatory Pelvic Disease

Some of the symptoms of an inflamed appendix may be imitated by a female pelvic infection, which STIs like gonorrhea or chlamydia frequently bring on. This condition is referred to as "pelvic inflammatory disease" (PID). However, these individuals typically have pain on both sides of the lower abdomen, fever, and occasionally a foul vaginal discharge.

Internal female anatomy may suffer significant harm from pelvic inflammatory disease. As the body tries to heal, scarring can occasionally result in infertility and ongoing discomfort. The best way to treat serious pelvic infections in women is with antibiotics like doxycycline, sometimes in conjunction with metronidazole twice daily for a week. Treating your sexual partners well is a wonderful idea.

Ovarian Cysts

Large or burst ovarian cysts or other female pelvic conditions may also hurt or bleed when they are present. An ovarian cyst is a collection of fluid inside of an ovary that is walled off. Many develop from egg follicles, while some tumors are benign or, less frequently, malignant.

Most cysts hurt when they rupture. Internal bleeding, severe irritation of the abdominal lining, or both can result from a rupture. Ovarian cysts can sometimes disappear independently, but a ruptured cyst actively bleeding will need to be surgically removed. Given that the pain is localized in the same area, a ruptured cyst on the right side may present as appendicitis.

Without modern diagnostic tools, it will be difficult to determine if abdominal discomfort is due to appendicitis or another condition. Despite this, we must keep in mind that medical professionals can only make a diagnosis based on bodily signs and symptoms in the past.

INFECTIONS OF THE URINARY TRAIL

Body waste is also expelled through the urinary tract and bowels. The kidneys, ureters, bladder, and urethra are all urinary system parts. In essence, it serves as the body's plumbing.

Most women have had a urinary tract infection at some point in their life (UTI). The urethra, the tube that drains the bladder, is frequently impacted by a bladder infection (cystitis). Escherichia coli (E. coli), the most prevalent bacteria, is one of many that could cause this infection. The male urethra is considerably longer, even though males are not immune to bladder infections. Bacteria, therefore, have a harder time getting to the bladder.

Sexual activity can spread some urinary illnesses, including gonorrhea. Dysuria, or painful urination, is fairly prevalent in men, although most women simply report a yellowish vaginal discharge.

Although painful urination is not unusual in cystitis, frequent urination is the most typical symptom. Some individuals perceive a hesitant or sudden

urge to urinate (referred to as "hesitancy" or "urgency") in the urine stream. A bladder infection may spread to the kidneys if not treated, infecting those organs (pyelonephritis). The following signs may appear in your patient once a kidney infection has taken hold:

- One-sided back or flank pain
- Persistent fever and chills
- Abdominal pain
- Bloody, cloudy, or foul urine
- Dysuria
- Sweating
- Mental changes (in the elderly)

It will be required to use antibiotics in this situation. If the infection is left untreated, it could turn into sepsis, a disease in which the kidneys allow the infection to enter the bloodstream. These patients may exhibit shock-related symptoms such as rapid breathing, low blood pressure, fever and chills, confusion, or unconsciousness.

A big part of reducing the likelihood of this issue is prevention medicine. People at high risk, particularly women, must adhere to fundamental hygiene practices. Standard guidelines include urinating immediately after a sexual encounter and wiping from front to back after urinating or defecating. Additionally, never put it off whenever there is a strong urge to urinate.

The key to avoiding bladder problems is maintaining an adequate hydration intake. To cleanse your system, think about using natural diuretics (substances that enhance urine production).

The main component of treatment is aggressive fluid delivery. Drinking a lot of water will aid in the infection's removal by reducing the number of bacteria in the bladder or kidney. Warmth is calming when applied to the bladder region. Another important component of treatment is antibiotics (brand names and veterinary equivalents are in parenthesis):

- Sulfamethoxazole/trimethoprim (Bactrim, SeptraTM; veterinary equivalent: Bird Sulfa)
- Nitrofurantoin (MacrobidTM)
- Ampicillin (veterinary equivalent: Fish Cillin)

- Amoxicillin (Amoxil; veterinary equivalent: Fish Mox)
- Ciprofloxacin (CiproTM; veterinary equivalent: Fish Flox)

Phenazopyridine is an over-the-counter drug that stops the unpleasant urination associated with bladder infections. (Brand names include Azo, Pyridium, and UristatTM.) If your pee becomes reddish-orange, it's a transient pharmacological effect, so don't be frightened. It is believed that taking vitamin C supplements will lower the number of bacteria in the urine.

A few natural remedies for urinary tract infections are also available:

- Garlic or garlic oil (preferably in capsules)
- Echinacea extract or tea
- Goldenrod tea with 1–2 tablespoons of vinegar
- Uva ursi (1 tablet)
- Cranberry juice or tablets (1–3 pills)
- Alka-SeltzerTM in 2 ounces of warm water (poured directly over the urethra)

Use any of these remedies three times a day.

HEPATITIS

The liver is the largest internal organ in a person. Any disruption in this organ's function poses a threat because it is crucial to survival. The liver performs a variety of functions, including the following:

Production of bile to aid in digestion, removal of blood toxins including alcohol, storage of some vitamins and minerals, and production of amino acids (for protein synthesis)

- Keeping blood sugar levels within normal ranges;
- converting blood sugar into glycogen for storage;
- producing cholesterol;
- creating urea, the primary component of urine;
- processing old red blood cells;
- producing various hormones.

The term "hepatitis" refers to liver inflammation. This potentially fatal illness, which is primarily brought on by viruses, prevents the body from being able to digest toxins or carry out the other tasks mentioned above.

Hepatitis comes in many forms, typically identified by letters, such as hepatitis A, B, and C. Hepatitis can also develop due to negative medication and alcohol interactions.

Oral or fecal infection might potentially lead to hepatitis. As a result, we debated whether to include this here or in the last section on hygiene and sanitation. Because some types of liver damage, including those brought on by alcohol misuse, are not related to hygiene, I choose to include them here. Sexual contact can also spread hepatitis.

Jaundice, or the yellowing of the skin and eye whites, is a defining feature of hepatitis. Stools turn brownish, and urine darkens. The liver can expand or become painful to the touch right below the lowest rib on the right side of the abdomen. Additionally, there is an all-over itching that is experienced. Other symptoms include extreme exhaustion, weight loss, nausea, and occasionally fever. Hepatitis patients can occasionally have no symptoms at all and still transmit the disease to others.

An infected person's bowel motions contain the hepatitis A virus. A person gets a flu-like illness that can quickly turn serious when they consume food or drink tainted with the virus.

By coming into contact with infected blood, plasma, semen, or vaginal fluids, hepatitis B can be transmitted. The symptoms are typically identical to those of hepatitis A, despite the possibility that they could progress to "cirrhosis," a chronic disease that causes irreversible liver damage.

Nodules replace the liver's working cells in cirrhosis, which do not affect metabolism. Long-term alcohol and drug addiction can also lead to cirrhosis. Ascites, a buildup of fluid in the belly, varicose veins (enlarged veins, particularly in the stomach and esophagus), jaundice, and swollen ankles are all indications that you may have liver cirrhosis.

Globally, the hepatitis C virus has a persistent infection in over 200 million persons. It is a blood-borne virus that can be caught through hazardous

sexual or medical behaviors, intravenous drug use, transfusion, or other means. Some of these people will eventually develop cirrhosis.

There won't be much you can do about this issue in a harsh environment than keeping your patient comfortable. However, most hepatitis cases are self-limited, meaning they will go away on their own in due course. Expect a minimum of 2 to 6 weeks of downtime. Hepatitis B is preventable with a vaccination.

You can, however, practice good preventive medicine by encouraging the following policies for your family or community:

- Wash hands after using the bathroom and before preparing food.
- Make sure children do not put objects in their mouths.
- Wash dishes with soap in hot water.
- Avoid drinking or eating anything that may not be properly cooked or filtered.

A few “detoxifying” and anti-inflammatory herbal remedies may help support a liver inflicted with hepatitis. Some of these supplements include the following:

- Milk thistle
- Artichoke
- Dandelion
- Turmeric
- Licorice
- Red clover
- Green tea

These are not cures but may assist your other efforts by having a therapeutic effect.

There are also nutritional strategies that may help:

- Avoid fatty foods and alcohol.
- Increase zinc intake.
- Decrease protein intake.
- Improve hydration status, especially with herbal teas, vegetable broths, and diluted vegetable juices.

FUNGAL INFECTIONS

Athlete’s Foot

A fungus called an athlete's foot (tinea pedis) causes a skin illness. If left untreated, this ailment could become chronic and linger for years. It typically appears between the toes but can also appear on other regions of the feet or even the hands (often between fingers). It should be mentioned that this condition is contagious and can spread through damp surfaces, sharing of socks or shoes, or both.

Moist environments exacerbate any fungal infection.

Athletes who frequently have athlete's foot.

- Keep their feet wet for extended periods;
- Have a propensity to suffer cuts on their hands and feet;
- Perspire a lot.

Find the following to make the diagnosis:

Skin flaking between the fingers or toes.

Burning and itching in the injured areas.

Red skin.

Stained nails.

Fluid leakage from surfaces that have been repeatedly scratched.

Maintaining clean, dry feet may be sufficient to allow for delayed recovery from the condition if it is mild. However, the problem frequently has to be treated with topical antifungal ointments or powders, such as miconazole or clotrimazole.

Adding generous amounts of tea tree oil to a foot bath and soaking for around 20 minutes are two popular home treatments for athletes' feet. Apply a few drops to the troubled area after thoroughly drying the feet. Do this procedure twice daily. Between treatments, try to keep the area as dry as possible.

Ringworm

A fungal infection of the skin's surface is represented by ringworm. It frequently forms an elevated, itchy area that is darker on the outside. As a result, it could look like a clearly defined ring. Ringworm is unrelated to worms.

Ringworm will probably result in bald patches if it spreads to a region with hair. Scratching the spots repeatedly will result in scorching and oozing. The course of conventional and natural treatment is identical to that for athlete's foot:

- Try to keep your skin as dry as you can.
- Use drying powders or lotions or an antifungal (miconazole, clotrimazole).
- Keep clothing that is too tight off of inflamed skin.
- Wash typically.
- Everyday sheet washing.

Yeast Infections

Our body may be vulnerable to yeast, a one-celled fungus reproducing by budding off the parent, and viruses and bacteria. Certain types are naturally present in the human body, while others might harm it.

Fungal infections can be systemic or local, such as vaginal infections, ringworm, or "athlete's foot" (throughout the entire body). Intestinal fungal infections cause digestive problems in some persons. Numerous ailments have been linked to systemic fungal infections, but confirmed cases tend to predominantly affect the young, the elderly, and people with weakened immune systems.

Vaginal Yeast Infections

The exceedingly frequent condition known as monilia, or vaginal yeast infections, is not a sign of an STI. A lady with a yeast infection will experience an itchy vagina and a thick, cottage cheese-like discharge.

With short courses of over-the-counter creams or vaginal suppositories like MonistatTM (miconazole), this infection is frequently quickly healed but

may return. Fluconazole (DiflucanTM), a prescription drug, may be used to treat resistant infections. If symptoms do not improve after three days, repeat the treatment.

Bacteria or protozoa bring on other non-yeast vaginal diseases, referred to as trichomoniasis and bacterial vaginosis. These are typically smelly and are treated with the oral prescription medication metronidazole, which functions as an antibiotic and an antiparasitic.

For treating mild vaginal infections, the time-tested vinegar and water douche, used once daily, is particularly successful.

Use a quart of water and one spoonful of vinegar to douche. Only apply this technique up till the patient feels better. Contrarily, women who frequently douche are more prone to develop yeast infections.

A helpful oral remedy can be acidophilus supplements in powder or tablet form. Yogurt and cranberry juice alters the pH of the vagina to a level that is unfriendly to yeast, making them beneficial meals for vaginal infections.

Infections with oral yeast

Some infants and individuals may have a similar yeast infection in their mouth. White patches on the inside of the cheeks, the roof of the mouth, and other areas of the oral cavity are telltale signs of this infection, sometimes known as "thrush." Thrush can irritate the skin, and because the white patches are adhesive, they will bleed if removed. Nipple tissue can occasionally be impacted in breastfeeding mothers.

Conventional treatment for oral thrush includes taking liquid fluconazole (Diflucan) once a day for a week. Another antifungal, nystatin, can be administered topically to infected nipples four times per day for 5-7 days or is available as a "swish-and-swallow" formulation for oral thrush.

CELLULITIS

An infection could result from any soft tissue injury. Modern medicine simplifies treating infections brought on by small wounds or insect bites.

Even with the finest wound care, there is always a potential that an infection will develop. Infection of the soft tissues below the skin's surface is known as cellulitis. The dermis (you've seen this area when you scraped your knee as a youngster), subcutaneous fat, and muscle layers are the main layers of soft tissue underneath the epidermis.

The sheer quantity of burns, scratches, and cuts will make cellulitis one of the most common medical conditions, despite being preventable. Without medications, sepsis, a potentially fatal disease, can result from this infection because of how easily it can enter the bloodstream. Cuts, bites, blisters, and skin cracks can all serve as entrance points for bacteria that cause infections that, if left untreated, can result in sepsis. In an off-grid situation, we think that cellulitis will be the cause of a lot of otherwise avoidable deaths. The following conditions can result in cellulitis:

- Skin that is peeled or has cracks between the toes
- Poor blood flow, which includes varicose veins
- Accidents that result in a skin break
- Animal bites, human bites, and insect bites and stings
- Ulcers brought on by long-term conditions like diabetes
- Using steroids or other immune-compromising drugs
- Injuries from prior surgeries
- Using drugs intravenously

The following are cellulitis's symptoms and warning signs:

- Pain or discomfort near the infection
- Chills and a fever
- Exhaustion
- General discontent (malaise)
- Muscle pain (myalgia)
- Warmth in the infection's region
- Discharge of pus or hazy fluid from the infected site
- Redness that typically spreads to the torso
- Swelling in the infected site (causing a sensation of tightness)
- The noxious odor emanating from the infected site

Although cellulitis occasionally heals on its own, antibiotics are typically used in treatment. These come in oral, topical, and injectable forms. After a

10–14-day course of treatment with drugs from penicillin, erythromycin, or cephalosporin (Keflex) families, most cellulitis will get better and go away. Popular antibiotics include ampicillin and amoxicillin. Maintaining the extremities elevated is beneficial if cellulitis is present.

Ibuprofen (Advil) or acetaminophen (Tylenol) help ease discomfort. Soaks in warm water have been utilized for symptom treatment for a long time. The entire 10–14 days of antibiotics should be used to avoid any recurrences.

Abscesses (Boils)

An abscess is essentially a pus-filled pocket and is a type of cellulitis. Pus is the byproduct of your body's attempt to get rid of an infection; it is made up of inflammatory fluid, live and dead bacteria, and white and red blood cells.

It's possible that the abscess began in a "cyst," a hollow structure filled with fluid, if an infected wound or defective tooth were not the sources of the infection. Several different cyst forms can get infected and develop abscesses:

Sebaceous skin glands are concentrated on the face and trunk and are frequently connected to hair follicles.

Inclusion: When damage causes the skin's lining becomes stuck in deeper layers. Skin cell production and growth in inclusions are ongoing.

Pilonidal cysts are close to the tailbone and are prone to infection.

Antibiotics used to treat cellulitis have difficulty efficiently penetrating abscesses because they tend to wall off infections. It might be required to intervene.

A hole must be created for the evacuation of pus to treat an abscess. Applying warm, moist compresses to the area is the simplest technique to help with this. This will assist in bringing the infection to the skin's surface, where it will form a "head" and maybe spontaneously drain. The abscess is "ripened" in this manner. The abscess will change from stiff to soft, and the exit place will have a "whitehead" pimple.

If this doesn't occur naturally over a few days, you might need to perform an "incision and drainage" technique to break open the boil. Prick the skin above the abscess where it is most close to the surface with the tip of a scalpel (a number 11 blade works best). Your patient should receive instant relief from the pressure release, and the pus should flow easily.

Finally, thoroughly rinse and point the skin around the wound with triple antibiotic ointment. Wrap in a fresh bandage. Tea tree oil, raw honey, and lavender oil are substitutes for triple antibiotic ointment.

Dental abscesses may also benefit from incision and drainage, although it's possible that the surrounding teeth won't be saved. (In the dentistry section of this book, you can learn how to extract a tooth.)

Tetanus

The traditional position linked to tetanus

When we stepped on a rusty nail, the majority of us went to receive a tetanus vaccine as required, yet few of us truly understand what tetanus is or why it is harmful.

The bacterium Clostridium tetani is what causes tetanus, which is an infection. The bacteria creates spores, reproductive cells, or dormant bacteria in soil or animal waste. These spores can withstand temperature fluctuations and can survive for years.

There are just approximately 50 recorded cases of tetanus annually in the United States. However, there are more than 500,000 cases annually worldwide. The majority of casualties are located in underdeveloped nations with subpar immunization systems.

Tetanus infections typically happen after a person experiences a skin break. Skin is a crucial barrier against infection, and any crack in the defenses makes a person vulnerable to infection. The most frequent reason is a puncture wound of some kind, like a rusty nail or an insect or animal bite. This is because deep, narrow wounds provide less access to oxygen, which the tetanus bacterium dislikes. However, any wound that compromises the skin qualifies: The tetanus bacteria can enter the body through burns, crushed wounds, and lacerations.

Tetanus spores activate as full-fledged bacteria and multiply quickly when introduced into a wound. Tetanospasmin, a potent toxin released by the bacterium, causes harm to the sufferer. This poison selectively targets the muscle-supporting nerves.

Tetanospasmin binds to motor nerves, resulting in "misfires" that cause the affected areas to contract uncontrollably. The entire body may or may not be affected by this neurological injury. The patient can display the typical "lockjaw" symptom, in which the jaw muscle is tense. Any muscle group, including the respiratory musculature, is vulnerable to the toxin's effects and can become life-threatening if impacted.

Newborns and those over 65 appear to experience the most severe cases, and both groups of people are more likely to pass away from the illness. The mortality rate from widespread tetanus is 25–50%, higher in neonates.

You will be on the lookout for the following early symptoms:

- Sore muscles (especially near the site of injury)
- Weakness
- Irritability
- Difficulty swallowing
- Lockjaw

Initial symptoms may not present themselves for up to 2 weeks. As the disease progresses, you may see the following:

- Progressively worsening muscle spasms (may start locally and become generalized over time)
- Involuntary arching of the back (sometimes so strong that bones may break or dislocations may occur)
- Fever
- Respiratory distress
- High blood pressure
- Irregular heartbeats

First and foremost, the survival doctor needs to be aware that Tetanus is not communicable despite being an infectious condition. If you use a conventional hygienic approach and wear gloves, you can treat a tetanus victim safely. An irrigation syringe drains away debris after properly

cleaning the wound with soap and water. This ought to restrict bacterial growth and hence lessen the production of toxins.

To eliminate the remaining germs in the system, you should provide antibiotics. It is reported to be effective to provide 500 mg of metronidazole (veterinary equivalent: Fish Zole) or 100 mg of doxycycline (veterinary equivalent: Bird Biotic) twice a day. The quicker you start antibiotic therapy, the fewer toxins your body will create. If you can administer it, intravenous rehydration is also beneficial. The patient will feel more at ease in a setting with dimmer lights and less noise.

Severe instances are treated with ventilators, tetanus antitoxin, and muscle relaxants or sedatives like ValiumTM (diazepam), but you are unlikely to have access to them. As a result, it is crucial to watch for the above-mentioned early signs in anyone who has received a wound.

Vaccination can help protect against tetanus. Booster shots are typically administered every ten years. Although the tetanus vaccine carries certain risks, severe side effects like seizures or brain damage happen less frequently than once in a million times. More frequently, milder side effects like fatigue, fever, nausea & vomiting, headache, and injection site irritation occur.

BOOK 5

PARTICULAR MEDICAL SITUATION

CHAPTER 10

MOSQUITO-BORNE ILLNESSES

Various infectious diseases are frequently transmitted through mosquito bites or vectors. The topic of anaphylaxis, a severe allergic reaction observed with bee stings, will be explored later in this book. Male mosquitoes do not sting people.

In a survival situation, we would likely spend more time outside, raising our risk of contracting one or more diseases spread by mosquitoes. Malaria is one of the most well-known illnesses spread by mosquito vectors.

A protozoan is a small creature that causes malaria. These germs enter your body when a mosquito bites you. The protozoa colonize your liver once inside the body. They then proceed to your organs and blood cells.

Malaria manifests as flu-like symptoms such as intermittent chills, fever, and sweating. As more of the protozoa's blood cells are harmed, the patient becomes anemic. The intervals between episodes get shorter over time, and organ damage could become irreversible.

Anyone who occasionally develops a fever accompanied by severe chills and sweat should be considered a candidate for treatment. The antimalarial drugs chloroquine, quinine, and quinidine are utilized.

The drugs indicated above may occasionally be used with an antibiotic, such as doxycycline or clindamycin. When patients consider traveling to areas where mosquitoes are common, doctors typically have sympathy for providing these drugs.

West Nile virus, yellow fever, and dengue fever are further illnesses spread by mosquitoes. The fewer mosquitoes around your getaway, the less probable you may contract one of these illnesses. By adopting the following actions, you can reduce the number of mosquitoes in your region and increase your chances of staying healthy:

- Keep an eye out for wet locations that can act as mosquito breeding grounds. All water that is not necessary for your survival should be drained.
- Fix any holes or flaws in the windows and door screens at your hideaway.
- Exercise caution and refrain from outdoor activities at dawn or dusk. Mosquitoes are most active around this time.
- When going outside, always wear long pants and shirts.
- Keep enough insect repellents on hand.

Consider using natural solutions if you are hesitant to utilize chemical repellents. To deter bites, spread citronella-containing plants on your skin and clothing.

Reapply regularly when using essential oil to prevent insects, and feel free to mix different oils if necessary. You could utilize the oils listed below in addition to citronella oil:

- Lemon Eucalyptus
- Cinnamon
- Peppermint
- Geranium
- Clove
- Rosemary

ENVIRONMENTAL FACTORS

The environment where a thing lives is called its habitat. It might resemble a lake, a forest, or the underside of a leaf. If you are a human, a town is probably where you live. Careful planning is required to prevent colliding with the elements in a not-your-own setting.

Your medical education should have a broad focus while also considering the kind of environment you anticipate inhabiting in the event of a disaster. Learn how to handle the medical conditions that are likely to arise in the environment you'll be in.

Numerous facets of the climate, particularly temperature extremes, can be dangerous. The effects of being too hot or too cold can harm humans. The body uses various techniques to regulate its internal core temperature, either increasing or decreasing it to the proper levels. The key internal organ systems required for sustaining life, including the brain, heart, and liver, make up the body's core. Skin, muscles, and extremities comprise the remainder, the periphery.

The body uses a variety of mechanisms to control core temperature:

Vascular constriction Blood arteries constrict to reduce flow to the periphery, reducing heat loss.

- Vasodilatation Heat loss increases as blood arteries enlarge to accommodate increased flow.

Sweat is one example. The evaporation of sweat produces a cooling effect.

- A shudder. By making heated actions, muscles generate heat.
- Workout. Heat is produced when work levels are higher; heat is reduced when work levels are lower.

To adjust the body's temperature to the surroundings, layers of clothes can be added or removed.

Hypothermia is a condition brought on by exposure to extremely cold temperatures. Hyperthermia, also referred to as heat exhaustion or heat

stroke, is a condition brought on by prolonged exposure to high temperatures.

With minimal preparation, many environmental causes of sickness can be avoided. Avoid scheduling lengthy outdoor work periods in the middle of the day if your location is warm. Provide a canopy, caps, or other sun protection if you must work in the heat. Make sure everyone drinks lots of water throughout the event and comes well-hydrated. While working in the heat, each individual will require 1 pint of water per hour. The precautions above could raise the risk of job injuries, dehydration, and sunburn.

Similarly, people who live in cold climates should consider the weather while planning outdoor activities to prevent hypothermia-related problems like frostbite. Children, in particular, rush outside into the cold without much thought about their clothing. Adults frequently disregard the wind-chill factor. Alcohol and drugs can cloud judgment and hasten the onset of a cold-related incident.

The healthcare provider's responsibility includes educating every individual in the patient's family or group about how to prepare for outdoor activities. Keep an eye on the folks you're sending out in the hot or cold weather as well as weather. If you don't, your surroundings turn into a powerful foe.

HEAT-RELATED EMERGENCIES

You can find yourself without shelter to keep you safe from the elements if you're in the woods or right after a natural disaster. In the sweltering summer, you will most likely get hyperthermia (heat stroke), a common ailment. Even in chilly weather, a person who is overdressed and dehydrated could suffer serious heat-related harm from vigorous physical activity.

Heat exhaustion or heat stroke are terms used to describe the negative effects of overheating. Heat stroke, which can leave a sufferer permanently disabled or even dead, causes permanent damage instead of heat exhaustion, which typically does not. It is an urgent medical matter that must be identified and handled immediately.

The heat index, a measurement of the effects of air temperature mixed with humidity, substantially correlates with the risk of heat stroke. The recorded heat index rises by as much as 10-15 degrees when exposed to full sun.

Muscle cramps or a brief loss of consciousness do not always indicate a serious heat-related medical crisis. Children running around on a hot day frequently get heat cramps. Usually, the issue can be resolved by removing them from the sunlight, massaging the troublesome muscles, and giving them water.

The body's core temperature must significantly increase to qualify as heat exhaustion. A thermometer of some kind ought to be included in your medical supplies because many heat-related symptoms might resemble those of other ailments.

Symptoms of heat exhaustion can also include either or both of the following in addition to cramping in the muscles or fainting:

- Confusion
- Rapid pulse
- Flushing
- Sweating
- Nausea and vomiting
- Headache
- Temperature elevation up to 105 degrees

Heat stroke may ensue if no action is taken to cool the victim. Heat stroke, in addition to all the possible signs and symptoms of heat exhaustion, can include the following symptoms:

- Loss of consciousness
- Seizures
- Bleeding (seen in the urine or vomit)
- Rapid and shallow breathing

If not treated immediately, shock and organ failure could ultimately kill your patient. The skin is probably dry yet warm to the touch; sweating may not be present. The body works to reduce its temperature until it reaches around 106 degrees. When thermoregulation fails, the body can no longer

regulate temperature naturally through perspiration. The body's core temperature might increase to 110 degrees during heat stroke.

Not because it has been burned, but rather because the blood vessels are dilating to try and release some of the heat, you'll notice that the skin turns red.

The patient's skin may appear chilly in some situations. It's critical to understand that the body's core temperature is raised. When touched, a person in shock could feel clammy and frigid. This discovery can deceive you, but a quick reading from your thermometer will show you the patient's genuine condition.

Treat people suspected of having hyperthermia as follows:

- Get them out of the sun or other heat source.
- Remove their clothing.
- Drench them with cool water (and ice, if available).
- Elevate their legs 12 inches above the level of their heart (the position for treating shock).
- Fan or otherwise ventilate them to help with heat evaporation.
- Place moist, cold compresses on their neck, armpits, and groin.

Why the armpits, groin, and neck? Applying cold compresses where major blood vessels are close to the skin will help to cool the body's core more effectively. In the woods, your only option for cooling yourself may be to immerse yourself in a chilly stream. This is a smart choice as long as you closely monitor your patient.

If the patient is awake and conscious, oral rehydration can help replace lost fluids. Patients who experience mental impairment may "swallow" the fluid into their airways, harming their lungs.

Ibuprofen and acetaminophen may seem like they could help lower fever, but this is not the case. These drugs don't function as well if the fever isn't brought on by infection because they are designed to reduce fevers brought on by infections.

Dress in weather-appropriate attire. In hot temperatures, tightly swaddling an infant in blankets is a prescription for disaster. Make sure everyone covers their heads. For example, a water-drenched scarf might work well in

the heat. To help with heat dissipation, towel off frequently as our face and head produce a lot of sweat we produce.

Dehydration can lead to heat exhaustion or heat stroke. Thus it's best to prevent it. One might easily lose body fluids and become dehydrated when working out or in the heat, especially if they are in poor physical condition. A key component of staying healthy and preventing heat-related illnesses is carefully planning your outside work in the summer heat and drinking enough water regularly.

CHAPTER 11

MEDICAL CONDITIONS RELATED TO COLD

When the body's core temperature falls below the range of 97.5 to 99.5 degrees, which is required for healthy body function and metabolism, hypothermia occurs.

There are several ways the body loses heat:

- Vapourization The body sweats, and as the sweat evaporates, the body becomes cooler.
- Radioactivity. Anytime the ambient (surrounding) temperature is lower than the body's core temperature; the body loses heat to the surroundings. If the outside temperature is 20 degrees, for instance, you will lose more heat than if it is 80 degrees.
- Conduct. When the body's surface comes into direct contact with freezing temperatures, like when someone jumps from a boat into icy water, the body loses heat. Since water is denser than air, it dissipates body heat more quickly.

The convection. For example, a cooler object moving against the body core might cause convection, a type of heat transfer. The body must expend energy to reheat the hot air that was previously present adjacent to the skin. One type of air convection is wind chill: If the outside temperature is 32

degrees, but the wind chill is 5, your body will lose heat as if the outside temperature were 5.

When the body is exposed to cold, it begins to produce heat. Shivering is the primary method of generating heat. The first sign of hypothermia is likely to be shivering, which muscles do to produce heat. If the patient is not warmed, more symptoms will surface as the illness progresses.

Other than shivering, the most obvious signs of hypothermia will be mental state-related: disorientation, lack of coordination, and lethargy. Speaking may become slurred as the disease advances, and the patient may nod or appear apathetic and uninterested in assisting themselves. This happens due to the brain's response to dropping temperatures: the brain functions more slowly when the body's core becomes colder. Although I have read of rare instances when humans (often youngsters) have survived considerably lower temperatures, brain activity stops at roughly 68 degrees.

Anticipating potential weather conditions and appropriate clothing is key to preventing hypothermia. The straightforward acronym COLD—which stands for cover, overexertion, layering, and dry—might be helpful to keep in mind:

Cover. Put on a hat to shield your head. By doing this, body heat won't be lost. Use mittens to protect your hands rather than gloves. Mittens are more beneficial than gloves because they keep your fingers in contact with one another. Thus, heat is preserved.

Overexertion. Avoid engaging in activities that make you sweat a much. You lose body heat quickly in cold conditions, and sweaty, wet clothes hasten the process. Utilize regular break periods to check for changes brought on by the cold. Layering. Pay close attention to how your group members are young, aged, or diabetic. Wearing layers of loose-fitting, lightweight clothing will keep you warm. For wind protection, wear garments composed of closely woven, water-repellent material. Cotton does not retain body heat, as well as wool or silk. A few synthetic materials are also effective.

Dry. As dry as you possibly can. As soon as you can, change out of your damp clothes. Pay close attention to your hands and feet because it's incredibly simple for snow to get into your gloves and boots.

Travelers should prepare for the weather, including windy and damp situations. If at all feasible, they should travel with a partner, prepare themselves physically for the challenge, and have enough food and water for the duration of the journey.

The impact that drinking alcohol can have in chilly weather is one thing that most people overlook. Alcohol may make you feel "warm," but in reality, it makes your blood vessels enlarge, which speeds up the rate at which heat escapes from the surface of your body. The expansion would counteract the body's efforts to stay warm because the body's response to cold is to constrict the blood vessels. Alcohol also impairs judgment, which could lead someone drunk to dress in clothing that won't keep them warm in the winter. The same is true of different "recreational" medications.

Until proven otherwise, you should always assume that a person in a chilly environment who is unconscious, disoriented, or lethargic is hypothermic.

To counteract the negative effects of hypothermia, immediate action is required. Make sure to follow these steps:

Get the person inside and warm. If you can't move the person, try to keep them as warm and wind-free as possible.

Remove soaked garments. Remove the person's damp clothing gently if they are wearing it. But many dry blankets over them, including the head (leave the face clear). Cover the ground if you're outside to prevent exposure to the chilly surface.

Watch your breathing. Severe hypothermia can render a person unconscious. Check the patient's pulse and make sure they are breathing. If required, start CPR.

Transmit body heat. Take off your clothes and lie next to the person, touching the skin to warm the person's body. Then wrap blankets around both of your bodies. Although this idea can make some people shudder, it's crucial to remember that you are attempting to save a life. It could be beneficial to rub or massage gently.

Give warm liquids to drink. Give the affected person a warm, non-alcoholic, non-caffeinated beverage to help warm the body if they are conscious and able to swallow.

Utilize dry, warm compresses. Apply a dry, warm compress exclusively to the groin, chest wall, or neck. Instead of applying warm compresses to the extremities, which occasionally worsens the condition, these locations will disseminate the heat much more effectively.

Don't use direct heat. Avoid warming the person with hot water, a heating pad, or a lamp. The intense heat puts stress on the heart and can harm the skin.

Hypothermia causes numerous organ systems to fail, resulting in death. People who get hypothermic from exposure to the cold are also more prone to cold-related wounds, including frostbite and immersion foot.

Immersion and Frostbite (Trench) Foot

Frostbite, or the freezing of human tissues, typically affects the ears and nose in addition to the extremities. Numbness and a "pins and needles" sensation are among the initial symptoms. The hue of the skin shifts from red to white to blue. Once the color turns black, gangrene develops. Gangrene is tissue death brought on by a lack of blood flow. Typically, the damaged body part is lost as a result.

Long-term immersion in water can damage neurons and small blood vessels, leading to immersion foot (formerly known as "trench foot"). While the affected foot may appear more swollen than frostbite, this condition resembles frostbite.

The injured extremities should be soaked in warm water (no hotter than 104 degrees) as a treatment for frostbite or immersion foot. Keep the following in mind when addressing these conditions:

Keep thawed tissue from freezing up once more. The extent of the damage depends on how frequently the tissue freezes and thaws. You should wait, but no more than a day, before treating your patient if you cannot stop them from being exposed to subfreezing temperatures again.

Frozen tissue should not be rubbed or massaged. Damage to already-harmed tissue will ensue by rubbing frostbitten tissue.

Never use a fire or a heat source to cure frostbite. People who have frostbite are numb and unable to feel the tissue that has been damaged. Burns that are severe may result.

Mild frostbite can be thawed using your body heat. For example, place them beneath your arm to warm up slightly frostbitten fingertips.

Cold Water Protection

Hypothermia can develop even in warm water. Heat will be lost from colder water than the body's natural temperature. You could pass out from hypothermia if submerged long enough off a tropical shore. Death from exposure is a typical occurrence in boating accidents and when people fall through the ice.

To prevent hypothermia if a boat capsizes, anyone going by boat should take the following precautions:

Don a life vest. Allowing you to float without expending a lot of energy and offering some insulation can prolong your life. The greatest life jackets have whistles built into them so you can signal for help.

Wear what you have on. Keep your clothes on when you're in the water. Zip or button up. Whenever you can, cover your head. You will be more protected from the cold if there is a layer of water between your body and your clothing. Once you're out of the water safely, take off your clothes only after you've done everything you can to stay warm and dry.

Get out of the water, even just a little bit. Less of your body will be exposed to the cold, causing you to lose less heat. Even if you can only get a portion of your body out of the water, clinging to a floating object will boost your chances of survival. If you don't have a dry area to swim to, don't waste your energy swimming.

To prevent heat loss, position your body. While you wait for assistance, use the heat escape lessening position (HELP) to minimize heat loss. Simply clasp your knees to your chest to prevent heat loss from your torso (the center of your body).

Group together. Keep warm by facing each other in a close circle and holding on to each other if you and your companions have fallen into the frigid water.

What if you're out on a hike outdoors and what appears to be a snowfield is a lake's frozen surface? It makes sense to bring a change of clothes in a waterproof container whenever you are out in the wilderness so you will always have dry clothing on hand in case you become wet. Additionally, have a wet-weather fire starter on hand.

You might be able to spot weak ice spots. A narrow patch of snow-covered ice on a lake often seems darker than the surrounding area. It's interesting how lighter-colored narrow patches of bare ice without snow seem. As you go, watch out for regions of contrasting hues.

Your heart rate, blood pressure, and breathing will increase due to sudden immersion in cold water. It is crucial to take the following actions:

1. Remain calm. Before you give in to the cold, you still have some time.
2. Take a deep breath and stoop to lift your head out of the water.
3. Walk on water and get rid of weighty items.
4. Make a U-turn and head back the way you came. There, the ice was sturdy enough
5. On the ice, extend your arms widely.
6. To lift a leg onto the ice, kick your feet to gain propulsion.
7. When you're on the ice, roll back the way you came. Don't get up!

By rolling, you disperse your weight rather than putting all of it on your feet. Once you are safe, crawl away and start to warm up right away.

ALTITUDE SICKNESS

We could have to move from a residence at sea level to a mountain refuge in any survival crisis. You'll probably be moving quickly when you have to do this. Some people may get altitude sickness, often known as "acute mountain sickness," due to the abrupt elevation change (AMS). This

syndrome develops when someone enters an environment with less oxygen availability and lower air pressures without first acclimating themselves.

Exertion worsens AMS and occurs most frequently at altitudes near 8,000 feet above sea level. Even while the illness is typically very brief, some patients may experience problems in the form of "edema" of particular organs. Edema is the buildup of fluid, and in altitude sickness, it can affect the brain or the lungs (pulmonary edema) (cerebral edema). Both of these ailments carry the potential to be fatal.

The greatest method of combating AMS, like many disorders, is prevention. Choose your retreat's path so that the elevation is as gentle as you can make it. Never attempt to climb more than 2,000 feet in one day. Ensure your employees don't push themselves excessively while climbing and supply enough fresh water. Avoid drinking alcohol while traveling.

Some ordinary people could be more susceptible to AMS at lower elevations than others. If you have to climb quickly, you should keep a tight eye on each party member. Typically, patients will show up with symptoms like a hangover. If they're minor, they typically involve:

- Fatigue
- Insomnia
- Dizziness
- Headaches
- Nausea and vomiting
- Lack of appetite
- Tachycardia (fast heart rate)
- “Pins and needles” sensations
- Shortness of breath
- In severe cases, you may see the following:
- Severe shortness of breath
- Confusion
- Cough and chest congestion (not nasal)
- Cyanosis (blue or gray appearance of the skin, especially the fingertips and lips)
- Loss of coordination
- Dehydration

- Hemoptysis (coughing up blood)
- Loss of consciousness
- Fever (rare)

Rest is necessary before treating AMS if only to halt further climb and give the body more time to adapt. A portable oxygen tank will be helpful as soon as symptoms appear if one is accessible. Carbohydrate-rich diets are believed to lessen negative consequences.

Acetazolamide is a drug that is frequently prescribed for both preventing and treating AMS (DiamoxTM). It has a diuretic effect, which expedites the body's natural process of eliminating extra fluid through urination. Acetazolamide takes between 125 and 1,000 mg daily, beginning two days before the ascent.

Normally, you should let your doctor know that you're planning a vacation to a high altitude and that you'd prefer to prevent altitude sickness. In an emergency, you'll typically be given a prescription for acetazolamide.

There is some proof that ginkgo giloba may aid with natural altitude sickness prevention. It has been demonstrated that a little dose of an extract of this chemical can help the brain handle decreased oxygen levels. Native Americans have benefited from utilizing ginkgo for AMS for ages.

WILDFIRE PREPAREDNESS

One of nature's methods for renewing the earth is fire. For some seeds to germinate, like those of the lodge pole pine, a fire must be present. Fire is a problem that poses a hazard to the people living there, despite its long-term advantages for the forest. Although wildfires can happen at any time of the year, summer is particularly risky in areas prone to drought.

Management of vegetation is one pertinent tactic. Your objective is to keep fires from spreading to your shelter. There are a few ways to accomplish this:

- Remove any dead wood that is close to your hideaway.
- You might want to think about clearing the area around your home of living vegetation. This can need you to get rid of the prickly shrubs you put there under your windows for protection.

- Use fire-resistant materials for your shelter. A wood-frame house with wooden shingles in a wildfire will burn up like match.

So let's establish a defensible space, a zone surrounding a building where wood and plants have been treated, removed, or otherwise modified to impede the progress of wildfire toward the building. A defensible area will also allow personnel battling the fire space to work.

If you're on flat land or a steep slope, you'll need a different amount of defensive space. Fires on flat terrain spread more slowly than those on slopes. (Flames and hot air rise.) Due to tiny pieces of burning trash in the air, a fire on a steep slope with an uphill wind will spread quickly and cause spot fires, which are little fires that start vegetation before the main burn.

Thick-canopied trees should be thinned out close to your home. This includes trees within 50 feet of your retreat on flat ground or 200 feet away on downhill terrain. Trees should be spaced 10–20 feet apart; remove branches less than 10–12 feet high. Remove all shrubs that are at the base of the trunks as well.

Of course, the natural impulse is to want to defend it once you have defensible space, even against a forest fire. You must regrettably remember that a lot of heat and smoke will surround you. Except if you're wearing complete fire protection gear, this will make things challenging. That will be the best action if there's a way out.

If you're leaving, ensure your supplies, any vital documents you might need to save, and some cash are already in the car. Make sure to turn off any air-conditioning system that brings outside air inside the house if you have electricity. Lock all doors, close all windows, and turn off all appliances. Tell people where you're going.

Dress in long pants, a long-sleeved shirt, and sturdy boots if there is a remote chance that you might become trapped in a fire. Wool is relatively fire resistant; thus, using a wool blanket as an additional exterior layer is very beneficial.

Stay on the side of the building, far from the fire outside if you're inside a structure. Pick a space with the fewest windows possible. (Windows allow

heat to enter the room.) Until you are forced to leave due to smoke or a building fire, remain there.

In that case, cover yourself with the blanket, exposing only your eyes. Some people believe that wetting the blanket first is a good idea. Don’t. Wet materials will result in more serious burns since they transfer heat more quicker than dry ones.

Stay low and, if necessary, crawl out of the building if you're having problems breathing due to the smoke. The lower you descend, the less heat and smoke there is. Keep your chin in and look down at the ground. It will safeguard your airway. Eyewash should be included in your kit because smoke affects the eyes.

Act promptly if you come across someone who is genuinely on fire. Keep in mind the classic saying "stop, drop, and roll" when someone's clothing is on fire:

Stop. The victim will likely be in a panic and be frantically putting out the flames. As a result, the wind is produced, which will fan the flames. Halt the victim from fleeing.

Drop. To the ground, knock the victim. Wrap them in a blanket if you can. The greatest textiles are those that are heavy.

Roll. Till the flames are put out, roll the victim on the ground. Any burned skin should be immediately cooled with water.

Smoke Inhalation

In addition to burns, which are covered in another section of this book, breathing too much smoke can cause serious illness or even death. Remember that burns to your skin can heal, but burns to your lungs cannot. The following are typical causes of smoke inhalation injury:

- Easy combustion Near a fire, combustion depletes the oxygen, resulting in hypoxia, a condition that can be fatal. The more oxygen is removed from the environment, especially in a closed space, the greater the fire is.

- Carbon dioxide Some smoke byproducts may not cause immediate death, but they may occupy the space that oxygen normally occupies in the lungs.
- Irritants from chemicals. When they come into touch with it, numerous substances present in smoke might irritate or injure the lungs. This results in edema and airway blockage and is analogous to a burn within the lung tissue. Chlorine gas is an illustration from World War I.
- Additional asphyxiants. The body's ability to utilize oxygen may be hampered by carbon monoxide, cyanide, and certain sulfides. The most frequent of these is carbon monoxide.

Symptoms may include the following:

- Cough
- Shortness of breath
- Hoarseness
- Upper airway spasm
- Eye irritation
- Headaches
- Pale, bluish, or even bright-red skin
- Loss of consciousness leading to coma or death

Soot around the mouth, throat, and nasal passages may be seen during your examination of the patient who has inhaled smoke. These areas could be inflamed and swollen. The victim is most likely to have a raspy voice and be out of breath.

Of course, you'll want to move your patient away from the smoke and into a fresh-air environment. You must be careful not to put yourself in a position where smoke inhalation would likely result in your death. Before entering a fire to rescue a victim, always think about wearing a mask. If CPR is required, be ready to perform it.

It's crucial to have a method for providing oxygen to your patient in case it's necessary. Portable oxygen canisters are available to deliver oxygen to the lungs fast.

Expecting a quick recovery after severe smoke exposure is unrealistic. With even the smallest movement, your patient will feel out of breath and sound

very hoarse. These symptoms might go away with time or be lifelong limitations.

Your team can leave dangerous circumstances swiftly if you plan escape routes and hold regular exercises. You will gain valuable time if everyone knows what to do in advance.

BOOK 6

DISASTERS MEDICAL PREPAREDNESS

CHAPTER 12

STORM PREPAREDNESS

Few people have ever experienced being in the path of a significant storm. Most people in a storm's path will not have prepared for it. Some people may even seek out exposed spots to overtly flaunt their disrespect. In this situation, not using common sense could have serious implications.

You might have to treat serious traumatic injuries in the immediate aftermath if you don't make plans to safeguard yourself and your family. If you lose your shelter, your family could be at risk for heat stroke or hypothermia. Later flooding could contaminate your water sources and put you at risk of contracting dangerous infectious diseases. Major medical

issues down the road can be avoided by getting ready to weather the storm safely now.

TORNADO PREPAREDNESS

A tornado, sometimes known as a "twister," is an erratically spinning column of air that makes contact with the earth's surface, as well as a thunderstorm (also known as a "supercell") that gave rise to it. When viewed from a distance, tornadoes typically resemble a dark funnel with various flying objects all around it.

Winds from tornadoes can reach speeds of up to 300 mph and move for several miles before losing strength. They will make a roaring noise similar to a passing train and may be followed by hail. It may be frightening.

More tornadoes are reported in the US yearly than in any other nation, at about a thousand. Most of these take place in "Tornado Alley," which comprises the states of Texas, Oklahoma, Missouri, Kansas, Arkansas, and surrounding ones. The busiest times are in the spring and early summer.

The trauma caused by all the flying debris tornadoes carry with them usually causes injuries. Large things can be carried by strong winds and thrown around in unbelievable ways. Evidence supports the claim that in 1931, a train weighing 83 tons was lifted and thrown 80 feet from the tracks.

The importance of having a strategy for your family to endure the storm cannot be overstated, even though certain locations may have sirens or other methods of warning of an impending twister. The best chance of surviving a tornado is to have a strategy before one arrives.

As soon as you spot a tornado funnel, seek safety. Leave if your home is a mobile home! They are particularly susceptible to wind damage. Get inside the nearest tornado shelter-equipped building; underground shelters work best.

Consider building your underground shelter if you live in Tornado Alley. Unlike bunkers and other structures designed for long-term defense, a tornado shelter must offer protection for a brief period. It doesn't need to be extremely big because of this; 8 to 10 square feet per person would be

plenty. Despite this, don't forget to consider ventilation, user comfort, and any unique demands.

Find a location where your family can congregate if a tornado is going your way if you don't already have a shelter. The best possibilities are basements, baths, closets, or other interior spaces without windows. Easily broken windows can result from a collision due to flying debris.

Get under a large, robust item, such as a table, for additional protection. You can further insulate yourself by draping a sleeping bag or mattress over your body. Talk about this strategy with every family member or group, so they are familiar with it. The location of the first aid kits and how to use a fire extinguisher should be taught to kids. Teach everyone how to safely cut off the gas and power, if possible.

Drive to a shelter if you have a car and can do so. Although you might be reluctant to leave your car, keep in mind that it can be easily thrown around in strong gusts, so you might be safer in a ditch or somewhere else lower than the road.

In a city, it is acceptable to exit the car and enter a substantial building. However, staying in your automobile will shield you from some of the flying debris if there isn't any other shelter. Put your head down below the level of the windows, fasten your seatbelt, and cover yourself if possible.

Avoid the woodland areas if you are on a hike and are caught outside when the tornado strikes. An open field or ditch may be safer since torn branches, and debris turn into missiles. You can gain some protection by lying flat in a low-ground area. If possible, cover your head, even if it's simply with your hands.

HURRICANE PREPAREDNESS

A hurricane is a powerful tropical storm with consistently 74 mph or higher winds. Hurricanes frequently wreak havoc on the East Coast and the Gulf of Mexico in the United States, costing billions of dollars in damage. In contrast to tornadoes, which can appear rapidly, hurricanes are usually discovered hundreds or even thousands of miles distant. We can keep an

eye on their progress and get a decent notion of how much time we have to prepare.

The Saffir-Simpson Hurricane Wind Scale is used to rank the severity of hurricanes. Higher-category storms, such as Hurricane Katrina in 2005, may result in tremendous destruction and fatalities. You must put together a plan of action to effectively handle key issues like housing, food, power, and other necessities.

Additionally, you might need to decide whether to evacuate. Contrary to certain disaster scenarios, if you get a good enough head start, you can escape one of these storms.

Rising waters (storm surge) may be enough reason to flee if you live near the shore or in a flood-prone location. In many circumstances, the authorities will issue an evacuation order. A municipality will frequently designate a public building in your neighborhood as a designated shelter that is hurricane-resistant.

If you venture out of town, aim to travel as far inland as possible. The warm water temperatures over the tropical ocean give hurricanes their strength; once they cross land, they swiftly lose that intensity.

In any case, be prepared with your supplies. Be prepared to have at least a week's worth of food and water, clothes, and medical supplies. Although most people pack for 72 hours off the grid, that number is somewhat arbitrary.

You ought to be aware of the vulnerabilities in your house. New residences in South Florida must be able to withstand winds of 125 mph because Hurricane Andrew ravaged the region in 1992. But most houses are designed to withstand 90 mph. (74 mph hurricane intensity) You might not be able to rely on the structural integrity of your home if the impending storm has sustained winds higher than that.

If you want to remain, choose a safe room for yourself inside the house. It should be in an area of the house facing the opposite direction of the wind. Make arrangements for any animals you intend to house, and bring all outdoor furniture and potted plants inside or up against the exterior wall,

ideally with chains. If you have hurricane shutters, install them. During hurricanes, flying debris can develop into missiles.

Planning inside is as crucial. Have an NOAA weather radio and plenty of fresh batteries if communications are disrupted during a significant storm. Fill up your gas and propane tanks early in every storm because you'll probably lose power.

As the storm draws closer, you should fill bathtubs and other containers with water. Set your freezer and refrigerator to the coolest temperature possible so food won't spoil immediately if the power goes out. Ensure you know how to turn off the gas, water, and power if necessary.

You should be concerned about another type of power, namely purchasing power. After a hurricane, credit card verification may not work, leaving you with no purchasing power if you don't have cash.

After a hurricane, it's typical to lose roof shingles, so keep some waterproof tarps on hand. After a significant storm, repair staff will be busy and might not reach you immediately. After Hurricane Wilma in South Florida in 2005, tarps remained on roofs more than a year later.

Make sure you have novels, board games, and light sources for when the power goes out if you have been holed up in your house during the storm. This will lessen worry and raise spirits. Spend some time in advance talking about the storm; this will give everyone a heads-up on what to anticipate and minimize worry.

Floodwater in inland areas may be contaminated after the storm. This water should not be used for bathing, drinking, or walking. Sterilization must be done completely. Food exposed to floodwater should not be consumed; if unopened food cans have been contaminated, wash them with soap and hot water before opening them.

Additionally, keep an eye out for downed electrical lines because they have been implicated in several electrocutions. When someone has been electrocuted, you should never touch them without first turning off the power; if you cannot do so, you will need to relocate the sufferer. Use a non-metal object, such as a dry rope or a wooden broom handle. If you don't, the current can shock you after passing through the person's body.

EARTHQUAKE PREPAREDNESS

Residents of the Gulf or East Coasts of the United States experience hurricanes more frequently, but the West Coast and some regions of the Midwest must also be concerned about earthquakes. A fault line is a crack in a base rock mass close to some populated regions. In this region, seismic waves or motions might release energy that can seriously disturb the surface.

The Richter scale is used to gauge an earthquake's intensity. Daily quakes below 2.0 are possible, although most people won't notice them. The strength multiplies by ten for each rise of 1.0 magnitude. The Great Chilean Earthquake of 1960 had the highest recorded magnitude (9.5 on the Richter scale).

A tsunami (tidal wave) can form if the energy is released offshore. A devastating earthquake (8.9 on the Richter scale) and tsunami struck Fukushima, Japan, in 2011, wreaking havoc, killing people, and causing local nuclear reactors to melt.

Due to the lack of warning, a big earthquake is particularly difficult. Make sure everyone in your family knows what to do in the event of an earthquake, no matter where they are. You probably won't all be in the house at the same time unless it happens in the middle of the night.

To be prepared, you will need, at the very least, the following:

- Water and food
- Power sources
- Clothing appropriate to the weather
- Fire extinguishers
- Alternative shelters
- Medical supplies
- Means of communication
- Money (don’t count on debit or credit cards being useful if the power’s down)
- An adjustable wrench to turn off water or gas

Plan where you will meet if there are tremors. Learn about the school system's plan to know where to look for your children during an earthquake. In an emergency, it would be reasonable to at least have some food, water, and a pair of supportive, comfy shoes in your car.

Locating your gas, electric, and main water shutoffs is crucial information. If there is a leak or electrical short, ensure everyone knows how to turn them off. Know the location of the closest medical facility, but be aware that you might be on your own because emergency medical personnel will likely be busy and might not arrive at your location right away.

Look around your home for furnishings that could not be sturdy enough to endure an earthquake, such as chandeliers and bookcases. Large flat-screen TVs are especially prone to falling. Check the shelves in the pantry and kitchen.

What should you do if you feel tremors coming on? Get beneath a table, desk, or another sturdy object if you're inside, or find a hallway inside. Avoid going near the kitchen, shelves, and windows. Avoid attempting to flee while the building is trembling since you could easily fall stairs or be struck by falling debris. Although some advice against doing so, most doorways aren't any sturdy as other building parts.

You can step outside after the initial earthquakes have subsided. Once there, keep a safe distance from anything that could fall on you, such as power lines, chimneys, and other objects.

If you're driving when the earthquake strikes, get out of the way as soon as possible since other drivers might not be as composed as you are. Avoid stopping beneath overpasses, trees, bridges, power lines, or light posts. Don't get out of your car when there are vibrations.

Gas leaks are one thing to watch out for; make sure you don't use your camp stoves, lighters, or matches until you're confident everything is okay. Even a match could start a spark that could cause an explosion. If you shut off the gas, you could consider allowing the utility company to restart it.

Never depend on phone service following a natural disaster. Telephone companies' available lines can handle only 20% of the potential call traffic at any given moment. All of the lines will probably be full. The usage of the

wavelength makes texting more likely to be successful than voice communication, which is oddly left out of this.

BOOK 7

ALLERGIC EMERGENCIES

CHAPTER 13

ALLERGIC REACTIONS AND ANAPHYLAXIS

To survive, you might have to leave your house and go outside. During the procedure, you risk getting stung by insects, being exposed to poison ivy and oak, and consuming unfamiliar foods. An "allergy" is when your body reacts negatively to a certain substance.

Foreign chemicals bring on allergies. Our reaction to them may be insignificant or potentially fatal. A severe reaction, anaphylaxis (also known as anaphylactic shock), can have an impact on the entire body. It may be fatal if it is severe enough.

Chronic and minor allergies

Localized itching and the appearance of a raised, patchy rash are typical symptoms of mild allergic responses. These responses may subside independently or with drugs like diphenhydramine (Benadryl).

Eczema, a skin disorder, can appear as a result of ongoing allergies. This rash is red, flaky, and patchy in various locations. Although 1 percent hydrocortisone cream typically works well for treating this kind of rash, it may occasionally be necessary to use a stronger steroid cream, such as clobetasol (on prescription). In the worst situations, oral medicines like prednisone may be necessary.

There are many essential oils you can apply to treat symptoms like itching if the allergic reaction is mild:

- Peppermint
- Lavender
- Chamomile (German or Roman)
- Calendula
- Myrrh
- Cypress
- Helichrysum
- Wintergreen
- Eucalyptus
- Blue Tansy
- Aloe Vera

You should mix the abovementioned oils 50/50 with olive or coconut oil before applying two drops to the affected area twice a day.

Hay Fever

Hay fever, sometimes referred to as allergic rhinitis or a seasonal allergy, is a group of symptoms that mostly affect the eyes and nose and are brought on by breathing in an allergen. Dust, pet dander, insect poison, fungi, or pollens can all cause hay fever. Allergic rhinitis patients may have the following signs and symptoms:

- Nasal congestion
- Sneezing
- Red eyes with tearing
- Itchy throat, eyes, and skin

Antihistamines, such as Claritin and Benadryl, are old standbys for this type of allergy. Alternative therapies for hay fever include essential oils for use on the skin from the following:

- German chamomile
- Roman chamomile
- Lavender
- Eucalyptus
- Ginger

Two drops should be applied to each temple 2-4 times daily. Alternately, place the head over a bowl of boiling water, add one drop of the oil, and inhale steadily for 15 minutes. Licorice root, stinging nettle, and St. John's wort are a few herbal teas that can be brewed and are potentially beneficial. Three times a day, consume 1 cup.

Neti pot

A neti pot is a helpful tool to keep on hand if you experience allergic reactions that impact your nasal passages. It resembles a tiny teapot. You can remove pollen and relieve congestion and mucus with a neti pot. Use as follows each day together with a sterile saline (saltwater) solution:

1. Lean forward to a sink.
2. Tilt one sideways with your head.
3. Keep your forehead and chin at the same height to prevent water from entering your mouth.
4. While performing the process, breathe via your mouth.
5. Gently insert the spout into your top nose.
6. Dispense the liquid so that it drains out the lower nose.
7. Blowing your nose will clear your nasal passages.
8. Turn your head to the opposite side and do it again with the opposite nostril.

The FDA has recently expressed concern with neti pots. They caution that the pots should only be used with sterilized saline because, in 2011, using tainted water resulted in the deaths of two persons.

Asthma

A persistent illness that impairs breathing is asthma. The airways that carry air to your lungs are impacted. These airways swell and become irritated in asthma sufferers when they are exposed to an allergen. Less air enters the lungs due to the airway's diameter being reduced. As a result, you'll experience an "asthma attack," during which you'll start to wheeze, feel tight in your chest, and cough.

Rarely can the airways narrow to the point where someone might suffocate from a lack of oxygen. Some typical allergens that set off an asthma attack include the following:

- Dander from pets or wild animals
- Dust or dust mite droppings
- Mildew and mold
- Smoke

The pollen

- Excessive stress
- Airborne pollutants
- A few medications

There are a lot of misconceptions about asthma, including the following:

- Asthma spreads easily.
- Asthma patients eventually outgrow their condition.
- If an asthmatic person relocates to a different area, their condition will improve.

And this is accurate:

- Although asthma may be dormant for a while, there is always a chance that it will flare up again.
- Asthma runs in families. A patient has a 70% probability of having asthma if both of their parents have it, compared to a 6% chance if neither parent has it.
- Asthmatic symptoms might vary from person to person and from attack to attack.

The following are the main symptoms of asthma:

- Cough
- Shortness of breath
- Wheezing (usually sudden)
- Chest tightness (sometimes confused with a heart attack)
- Rapid pulse rate and respiration rate
- Anxiety

Other signs that point to a life-threatening event exist besides these primary ones. A person with asthma who has developed cyanosis—blue/gray lips, fingertips, and/or face—is in danger.

Exhalation takes longer than inhalation in people with severe asthma. The wheezing can become louder. A patient who has gone too long without enough oxygen may get disoriented, tired, and finally pass out.

Make the diagnosis by listening to the lungs on both sides with a stethoscope. Pay particular attention to the top, middle, and bottom lung regions. You may hear the patient breathing relatively loudly and musically during a minor asthmatic attack. As asthma gets worse, less air is going through the airways, so the wheezes will have a higher pitch and perhaps not be as loud. You could not hear any sounds at all if there was no air flowing through.

A straightforward diagnostic tool, the peak-flow meter, can gauge how wide the patient's airways are. You can tell whether a patient is having a panic attack, which can exhibit some of the same symptoms as an asthma attack, by having them forcibly exhale into the device.

When the patient is healthy, measure the peak flow at baseline. Peak flow will be 20–40% lower in people with mild asthma. A severe episode is indicated by a percentage of greater than 50%. Peak flow will be somewhat near normal when there is no evidence of asthma or an upper respiratory infection in the cough. Similar reasoning applies to panic attacks; while short of breath, the peak flow is still within normal bounds.

The two pillars of effective asthma treatment are avoiding allergens that set off symptoms and keeping airways open. There are two types of medications: those that provide immediate relief from an attack and those that reduce the frequency of asthmatic attacks.

Drugs for immediate relief include bronchodilators or inhalers that widen airways, like Albuterol (Ventolin, ProventilTM). These medications ought to provide great relief and swiftly open airways. If you observe a rapid heartbeat in patients taking these medications, don't be alarmed; this is a typical side effect.

Candidates for daily control therapy include patients who take quick-relief asthma drugs more than twice per week. These medications often inhaled steroids, reduce the number of episodes when used daily. They could come as tablets or inhalers. Recall that inhalers lose their effectiveness over time. Contrary to many pills or tablets, an expired inhaler will lose its effectiveness quickly.

It's critical to identify the allergens that set off an asthma attack in a patient and devise a strategy for avoiding them as much as possible. Additionally, keep as much asthma medication as possible in case of need. Most of the time, doctors are sensitive to patients' requests for further prescriptions for their asthmatic patients.

Natural treatments can be used to treat mild to moderate asthma conditions. Quite a few drugs have been suggested to be beneficial.

Take regular drugs if your peak flow reading is 60 percent normal or less since more study is needed to confirm how much some of these substances influence severe asthma.

Never undervalue the impact of your diet. Try the following to enhance your diet and manage your asthma:

- Substitute plant proteins for animal proteins.
- Up your consumption of omega-3 fatty acids.
- Cut out dairy items like milk.
- Try to eat organic food whenever you can.
- Replace trans fats with extra-virgin olive oil as your primary cooking oil and cut back on trans fats.
- Drinking water will help you keep hydrated and reduce the viscosity of your lungs' secretions.

The ability to manage the panic response during asthmatic attacks is also thought to be aided by various breathing techniques, such as those taught in

yoga classes.

NATURAL ASTHMA TREATMENTS

Tea with ginger and garlic. When the ginger tea is hot, add four minced garlic cloves. Drink it twice daily after cooling it down.

The asthmatic attack may be alleviated by ephedra, coltsfoot, codonopsis, butterbur, nettle, chamomile, turmeric, and rosemary.

Coffee. A stimulant like black, unsweetened coffee may help your lungs work more effectively during an attack. Coffee can dehydrate you, so limit your intake to no more than 12 ounces at a time.

Eucalyptus. To open airways, use steam or direct inhalation. Inhale deeply while rubbing some oil between your hands or in some steaming water.

Honey. In a few minutes, breathing should improve by taking deep breaths from a jar of honey. Drink a 12-ounce glass of water with one teaspoon of honey in it three times a day to lessen the frequency of attacks.

Ginger and licorice. In a cup of water, combine 12 teaspoons each of licorice and ginger. Licorice can cause blood pressure to increase.

Rub in mustard oil. Rub your chest and back with a mixture of mustard oil and camphor.

D vitamin A vitamin D deficit has been identified in some asthmatics.

ALLERGIC REACTIONS

An immunological reaction to an allergen may have an impact beyond the immediate area in a tiny percentage of persons. Multiple organ systems are involved in severe allergic reactions, which can be deadly.

The first anaphylactic reactions were discovered when scientists attempted to desensitize dogs to a specific poison to protect them against it. After receiving the poison a second time, several dogs succumbed to their injuries

rather than being protected. Their rogue immune systems caused them to pass away.

Any of the following can cause anaphylaxis:

- Drugs, including aspirin, ibuprofen, anesthetics, x-ray dyes, antibiotics (like Penicillin), anesthetics, and even several heart and blood pressure medications
- Foods, including nuts, fruit, and shellfish
- Bee stings and yellowjacket wasp stings
- Latex — latex-rubber gloves
- Workout frequently after eating
- Idiopathic, which means "of undetermined cause."

Anaphylaxis has telltale signs and symptoms; the sooner you treat it, the less probable it is that it will be fatal. These are a few of them:

- Rashes. This frequently happens in locations unrelated to the primary exposure, such as an all-over rash in a person with a bee sting on their arm.
- Swelling. This may be throat- or airway-specific or universal in some cases.
- Breathing problems Asthmatics commonly experience wheezing.
- GI symptoms. These could include abdominal pain, diarrhea, nausea, and vomiting.
- Consciousness loss The patient might seem to have passed out.
- Paresthesias. Strange sensations on the lips or mouth, especially in people with food allergies, might be a part of this.
- Shock. Reduced blood pressure and respiratory failure that results in death via coma.

Anaphylactic shock is not the same as fainting. Differentiation is discernible in numerous ways: A person who has fainted typically has a pale complexion, but someone experiencing anaphylactic shock frequently has a flushed appearance. Anaphylaxis has a rapid heartbeat, whereas fainting has a slower heartbeat. Breathing issues and skin rashes are uncommon in persons who have just fainted, but they are typical signs and symptoms of an allergic reaction.

When someone has a food allergy, they could experience the consequences very quickly; in fact, their life might be in jeopardy in just a few minutes. Serious anaphylactic response sufferers should be monitored overnight because the second wave of symptoms occurs, sometimes several hours after the exposure.

Histamine, which initiates an inflammatory reaction, is a significant participant in this anaphylactic cascade. As a result, antihistamines are drugs that combat these negative effects. Mild allergic reactions may benefit from these medications. Antihistamines in tablet form, such as diphenhydramine (Benadryl), take about an hour to properly enter the bloodstream.

This is too slow to stop an anaphylactic reaction and save lives. Chew the pill to help it enter your system more quickly if that's all you have. It might not be sufficient, though, even now. As a result, we turn to an alternative medication that is more efficient: adrenaline, also known as epinephrine, in the US.

The adrenal glands, tiny structures close to the kidneys, produce the hormone adrenaline (also known as epinephrine). Epinephrine increases blood pressure, causes your heart to beat more quickly, and opens up your airways so you can breathe. The hormone effectively combats all of the anaphylaxis's side effects. As a result, it must be included in your medical supplies.

Epinephrine, or adrenaline, is administered intravenously. Although they have been tried in the past, inhalers have drawbacks. Breathing becomes difficult with anaphylactic reactions. An inhaler won't help you much if you can't breathe via your nose or mouth.

The most widely used kit for treating anaphylaxis sold commercially is the EpiPen. It's crucial to comprehend the right usage of it. How to do it is as follows:

1. Take the EpiPen out of the case.
2. Make a tight fist with it.
3. Take away the cap (some have two caps).
4. Instruct the sufferer to sit or lie down.
5. Maintain the thigh muscle's stillness.

6. Firmly press the end to parallel to the thigh; you should hear a click.
7. Maintain for ten seconds.
8. Rub the injection site.
9. Safely dispose of the needle.

Keep in mind that if the EpiPen isn't nearby, it won't be useful to you. Everyone in your family or group who has allergies should always have it.

Adrenaline (Epinephrine), being a liquid, won't remain active indefinitely as other tablets or capsules might. Make careful to adhere to the storage guidelines. The EpiPen shouldn't be kept in a heated environment, but it shouldn't be placed where it might freeze, as this drastically reduces its effectiveness.

When do you start stealing those priceless supplies, as you will only have a finite amount of this medication? The rule of Ds is a formula that is simple to remember:

A definite reaction is an obvious, significant reaction, such as a rash or breathing difficulties.

Any reaction that gets worse after a short while is dangerous.

Use the EpiPen before the situation becomes life-threatening if it deteriorates. Use it if you're unsure. It's a good idea to keep a few on hand.

Only if your patient has trouble breathing or has fallen unconscious is an imminent risk likely to arise. In these situations, the main causes of death are the respiratory failure or stomach acid inhalation into the lungs.

Due to ongoing heart issues or high blood pressure, certain people may not be able to take adrenaline (epinephrine). Make sure your people speak with their doctors to confirm that using it is safe.

BOOK 8

INJURIES

CHAPTER 14

INJURIES TO SOFT TISSUES

Daily survival activities like cooking and cutting wood can result in various soft tissue injuries (those that do not involve bony structures). Any injury to the skin—from a minor cut to a serious burn—punches a hole in your body's defenses.

Because each wound is unique, each one needs to be assessed separately. If the patient is not there when the wound is sustained, the medic should start by asking, "What happened?" By looking around the accident scene, you can get a sense of the kind of debris you could discover in the wound and the likelihood of infection. Always begin by assuming that a wound is filthy. You should also inquire about the victim's medical history, including any chronic conditions like diabetes and medication allergies.

The following things must be evaluated during the physical evaluation of a wound:

- Where it is on the body
- The size of the injury
- The extent of the injury

- Involved tissues types (skin, muscle, bone)
- Nerve and circulation involvement

Ask the patient to demonstrate the whole range of motion for the injured extremity during your examination, if possible. This is particularly crucial if the injury affects a joint.

The evaluation and treatment of various injuries are covered in this section.

SMALL WOUNDS

When a soft tissue injury doesn't reach the dermis, the deepest layer of the skin, it is regarded as mild. This would incorporate scrapes, bruises, and cuts:

Scrapes and cuts. These skin rips seldom become infected in a healthy person since they only reach the epidermis (superficial skin layer).

Abrasions. Here, a small section of the epidermis has been removed. You undoubtedly went through a lot of these as a kid.

Contusions or Bruises. These result from blunt trauma and barely pierce the skin. However, blood vessels damaged by the impact are seeping into the skin.

All of these minor wounds are easily treatable:

- Thoroughly clean the wound.
- An antibiotic ointment like Neosporin, BactrobanTM (mupirocin), honey, or an antiseptic like Betadine might help prevent infection.
- Use over-the-counter medications like acetaminophen and ibuprofen to treat minor discomfort.

An object typically used for shaving wounds, a moist styptic pencil can stop minor bleeding. If the skin is broken, a protective adhesive bandage should be applied to the wound to stop infection. A liquid bandage, like New-SkinTM, is a great approach to treating a minor wound.

Anywhere a bruise appears to be spreading, apply pressure and ice (if available) to stop it from getting worse. As bruises heal, their hue will vary

from blackish blue to brown to yellow.

An alternative procedure to address these problems is as follows:

1. Determine the severity of the wound; if it's mild, you can keep using home remedies.
2. Use natural blood clotting agents like yarrow, cinnamon, or cayenne pepper powder to stop minor bleeding. Apply gauze pressure to the region.
3. Use a herbal antiseptic to disinfect the wound once any mild bleeding has ceased. Wash the wound well with sterile water and a few drops of oil. Among the essential oils having this quality are:

- Lavender oil
- Tea tree
- Rosemary
- Eucalyptus
- Peppermint
- Additional natural antiseptics include St. John's wort, raw, unprocessed honey, Echinacea, garlic, and raw honey.

4. Apply fresh gauze to the wound. Avoid wrapping too tightly.

5. Up until the wound has healed, switch the dressing, apply more antiseptic, and check for infections twice daily.

MAJOR AND HEMORRHAGIC WOUNDS

Traumatic wounds may be common in a major tragedy. As a result, the family or group's medic needs to be ready for the worst conceivable injuries. Cuts in the skin might be little or severe, deep or shallow, clean or diseased. Most large cuts, also known as lacerations, penetrate the dermis and epidermis and are accompanied by moderate to heavy bleeding. Venous bleeding can occur, which appears as steady, dark red blood pouring from the site. Blood can also bleed arterially, which appears bright red due to the higher oxygen content and in spurts that match the patient's pulse. A major cut can have both since the vein and artery flow simultaneously.

Large blood arteries, tendons, and nerves may become implicated below the skin's surface. Examine the area's capacity to move, circulation, and feeling. Deep lacerations and crush injuries are more likely to cause vessel and nerve damage.

Consider the capillary refill time when an extremity is injured to check for circulation elsewhere. To do this, press a fingertip, toe, or nail bed. If you are a person with normal circulation, this area will turn white when you release pressure and return to its normal color in two seconds. If it takes longer or the fingertips turn blue, a blood vessel may have been injured. There may be nerve injury if the feeling is diminished (test by lightly pricking with a safety pin beyond the level of the cut).

Considering Blood Loss

A crucial component of treating wounds is assessing blood loss. An adult individual of average stature has roughly 10 quarts of blood. The impact that blood loss has on the body depends on how much blood is lost:

- No more than 1.5 quarts (0.75 liters). The patient feels little to no effect. For instance, you can give 1 pint of whole blood up to once every eight weeks.
- 1.5-3.5 pints (0.75–1.5 liters). Rapid breathing and heartbeat occur. The skin turns cold and could look livid. Typically, the patient is quite agitated. If you're not used to seeing blood, you could also be. An unskilled medic could feel uncomfortable even if only a small amount of blood is on the patient or the floor.
- 3.5-4 pints (1.5–2 liters). Blood pressure starts to fall; the patient can seem bewildering. Heartbeats are often very fast.
- Two liters or more: The patient is now extremely pale and may be unconscious. The patient is in grave danger when the blood pressure continues to fall, the heart and breathing rates slow down, and there is a prolonged period of blood loss.

Wearing nitrile gloves when treating the patient will prevent the wound from being contaminated. Thus you should always have them in your pack as the physician. Try to avoid touching the finger or palm areas as you put on the gloves. If no gloves are available, grab a scarf or other cloth and apply it to the wound.

Direct pressure is the cornerstone of bleeding control. Frequently, using this method will end bleeding on its own. Elevating the affected limb above the heart level can help reduce bleeding in an extremity.

Major arteries can be compressed manually at pressure points since they are situated where they are so near the skin. It may be possible to stop bleeding further down the blood vessel's course by applying pressure on the pressure point for the wounded area.

We can map precise places where we should focus our efforts to stop bleeding using pressure points. For instance, the popliteal artery, a sizable blood vessel, is located behind each knee. Applying pressure on the back of the knee will assist stop bleeding if you have a wound on your lower leg. Below is a schematic showing some of the main pressure spots.

Applying a tourniquet might be necessary if this doesn't work to stop the bleeding. Most are easy to operate and can be put in place using only one hand. Avoid rope or wire when making an improvised version; use a folded bandana at least 2 inches wide and a stick. Tourniquets must be applied tightly; stopping venous bleeding usually takes less pressure than stopping arterial bleeding.

The prudent placing of a tourniquet over a wound is required. The tourniquet slows blood flow via the open blood vessel, but it also stops blood flow through neighboring healthy blood arteries. It is crucial to remember that in survival situations, the tourniquet should be adjusted every 10 minutes to allow blood to flow to uninjured parts. Additionally, this will let the doctor evaluate whether the bleeding has stopped due to clotting.

Long-term use of tourniquets can result in the patient losing a limb due to lack of circulation. Tourniquets are unpleasant if left in place for too long. Additionally, your body may accumulate toxins in the affected area, which concentrate and rush into your body's center when the tourniquet is released. With a tourniquet in place, this issue can arise in less than an hour or two. As a result, you should affix a mark to the victim indicating when the tourniquet was applied.

Release pressure from the tourniquet while keeping it in place after you are confident that serious bleeding has stopped. Use sterile water or a solution

of 1 part betadine to 10 parts water to vigorously irrigate (flush) the wound. Most studies reveal that sterilized water is just as effective for wound healing as a concentrated antiseptic solution (sometimes better). While using Betadine or hydrogen peroxide for the initial cleaning is permissible, these concentrated treatments should never be used for subsequent cleaning. Concentrated antiseptics dry up these delicate new cells as they try to increase, which slows recovery.

Bandaging the wound not only helps apply pressure; it also serves as a means of soaking up blood. Make sure to apply the most pressure to the area of the cut where the bleeding was taking place. Start packing if the blood is coming from the top of a sizable wound.

To add more protection, apply a dry dressing to the entire area. An excellent bandage that is simple to use and produced by the Israeli army is sold practically everywhere survival gear is offered. The Israel combat dressing has the benefit of applying pressure to the bleeding spot on your behalf. This gives medical professionals more hands-free time to care for other patients or attend to more victims.

Until the wound has healed, bandages should be changed often, at least twice daily.

GUNSHOT AND KNIFE WOUNDS

Traumatic injuries like knife and gunshot wounds can be treated using the same procedure as above to halt bleeding and bandage a wound. You have probably heard that removing a knife risks making the bleeding worse. More time will allow you to transport the patient to the hospital, but what if there are no hospitals nearby? Transporting your victim to your base camp will require you to get ready to take out the knife. Have enough clotting substances and gauze on hand.

The converse is true for bullet wounds when the bullet is often extracted whenever possible when access to contemporary medical care is available. Avoid digging for a tricky-to-find bullet if you don't have the luxury of

taking the patient to a trauma center. Although the equipment is designed for this, manipulation could result in more bleeding and infection.

Consider the instance of President James Garfield for a historical illustration. An assassin shot him in 1881. Twelve separate doctors rushed to remove the bullet, sticking their bare hands into the wound. The wound most likely wouldn't have been fatal, developed an infection. The president consequently passed away. In stark environments, pause before removing a projectile that isn't readily accessible and apparent.

Remember that the above procedure is intended for survival circumstances where aid is not on the way.

Agents for Commercial Hemostasis

In examinations of casualties on the battlefield, blood loss claimed the lives of 50% of those killed in battle, and 25% did so within the first "golden" hour after being wounded. After an hour without care, a victim's likelihood of survival drastically decreases; for every additional 30 minutes without care, mortality increases by three times.

Major bleeding management may fall under the purview of the trauma surgeon, but what if you find yourself without access to advanced medical treatment? Significant developments in hemostasis have occurred over the past ten to fifteen years (stopping blood loss).

Although many different kinds of hemostatic agents are available for medical storage, QuickClot and Celox are the two most widely used. Both are available as powder or gauze that has been embedded with powder.

Zeolite, a volcanic material that was once a component of QuickClot, successfully stopped bleeding wounds but also set off a reaction that resulted in some severe burns. The original component of KaopectateTM, kaolin, a clay mineral, is used to make the present generation. It doesn't include any parts from people, animals, or plants.

The fact that QuickClot does not permeate into the body and can be challenging to remove from the wound is a drawback. This was undoubtedly accurate for earlier generations, but it is now supposedly less of a problem, especially if you use the brand's gauze bandage.

The other widely used hemostatic substance is celox. Chitosan, an organic substance made from shrimp shells, makes up its composition. Despite this, the manufacturer asserts that people with seafood allergies can use it. Blood and Celox combine to produce a gel-like clot when they come into contact. It is available in impregnated gauze dressings, just like QuickClot.

Even in people using anticoagulants like heparin, warfarin, or CoumadinTM, celox effectively produces clotting without further diminishing coagulation factors. Because it is an organic substance, the body's natural enzymes progressively convert chitosan into other chemicals. Celox, like QuickClot, has FDA approval. Celox is compared well to other hemostatic medications in US government studies.

The fact that hemostatic agents may be challenging to remove before surgical intervention is a drawback to their usage. As a result, emergency medical workers hardly ever employ them in everyday situations.

The militaries of the US and the UK have tested and successfully used QuickClot and Celox gauze dressings in Iraq and Afghanistan. Although useful, these substances shouldn't be administered to a bleeding patient as the first line of treatment. Your approach, in this case, should be pressure, the elevation of a bleeding extremity above the heart, gauze packing, and tourniquets. You do, however, have a powerful backup weapon to stop the bleeding if these efforts fail.

CARE FOR SOFT TISSUE WOUNDS

Once the bleeding has been stopped and a dressing has been put on, you are in a safer situation than before. However, in your duty as a medic in a harsh environment, you must monitor the wound's condition until full recovery. There are two ways to heal an open wound:

Watering down the wound

First intention (Closure). The incision is stitched or stapled shut in some manner. Although this leads to a smaller scar, there is a chance that it will unintentionally trap bacteria deep inside the wound.

A secondary goal (Granulation). Granulation tissue, a quickly expanding, early scar tissue packed with blood vessels, forms when a lesion is left open. It fills in any gaps when the margins of the wound are not contiguous. It eventually develops into mature scar tissue. The scar is larger than it would be if the incision had been closed with the main goal, but the risk of infection is reduced with adequate care.

Remember the adage, "Dilution is the answer to pollution." A bulb or irrigation syringe (60-100 ml) can apply pressure to the water flow and remove debris and old clots. Any open wound should be gently scrubbed with diluted Betadine or sterile water. You might have some (often little) bleeding. This is not necessarily a bad sign but rather a sign that tissue is developing new blood vessels. Till it stops, apply pressure with a clean bandage.

For the best chance of a speedy recovery, wound dressings should be changed often (at least twice daily or anytime the bandage becomes saturated with blood or other fluids). It's crucial to clean the wound area before changing a dressing. You can do this by using sterile (drinkable) water or an antiseptic solution, such as a diluted solution made by adding one betadine to ten parts water.

Dakin's solution is an easy-to-make alternative antiseptic solution that uses standard storage items. This treatment, developed during World War I, treats skin lesions like pressure sores in bedridden patients. It is simple to assemble, eliminates dead cells, and is made up of the following:

Baking soda, standard home bleach, sodium bicarbonate, and boiled water are all necessary ingredients.

Add 12 teaspoons of baking soda to 4 cups of sterile water to create Dakin's solution. Once you get the necessary strength, add bleach: Three teaspoons will have a mild antibacterial effect (enough for clean, healing wounds), whereas three tablespoons will have a larger impact on infected wounds. Avoid ingesting Dakin's solution, and watch for adverse reactions like rashes or other irritation. As it quickly loses strength, it stores in darkness at room temperature and often produces new batches. Don't heat or freeze the solution.

We utilize a "wet-to-dry" dressing technique to ensure the quick healing of open wounds. Directly over the wound, apply a bandage that has been sterilized, water-soaked, and wrung out. Keeping new cells in a wet environment prevents them from drying out. Place a dry bandage and some kind of tape to keep it in place on top of the bandage that contacts the healing wound. Consequently, you have a wet-to-dry dressing.

To avoid skin infection from germs, it may also be a good idea to use some triple antibiotic ointment around a healing wound. Natural alternatives include raw honey, tea tree oil, and lavender oil.

You might notice some blackish material on the wound's edges over time. It is best to remove this nonviable material. You might only need to scrub it out, or you could need to remove the dead tissue using a scalpel or pair of scissors. Debridement is the process of removing material that is no longer necessary for healing.

WOUND HEALING

The decision of whether to stitch up a wound is seldom without debate. What procedure should be followed, when, and why would you choose to close a wound? As a general rule, start with the least invasive techniques first. These are tapes, glues, staples, and sutures.

Duct-taped butterfly closure made on the fly

There are numerous ways to stitch up a laceration. It makes sense to employ the least complicated and invasive technique possible. Steri-Strips and butterfly closures, sticky bandages that adhere on either side of the incision to bring it together, are the simplest to use. They can be removed without puncturing the skin and eventually disappear on their own. A butterfly closure can be created even with duct tape.

Cyanoacrylate, a unique adhesive marketed under the brand name DERMABONDTM, is the second least intrusive procedure. This medical-grade adhesive was created especially for application to the skin. Simply apply a tiny layer of glue over the laceration while holding the skin's borders together. Keep in position until dry. As the skin heals, it will naturally peel off.

Some have suggested using Super GlueTM, a common household product significantly less expensive, to close wounds. This product is not intended for use on the skin and has somewhat different chemical properties. Some people may have skin irritation, and reactions resembling burns have been noted.

Whether you use a small amount of Super Glue on the inside of your forearm and wait 24 hours, you can check to see if you have an allergic reaction.

Skin staplers are another way of closure. They should be removed after about seven days since they function by "pinching" the skin together. To round out the edges of the skin and approximate them for the person doing the stapling, you will need two toothed tweezers (also known as "Adson forceps"). Therefore, having a helper is best during stapling. The one

holding the tweezers, not the one stapling, is the one with the greatest talent.

The best way to remove staples is with a special staple remover tool. Although generally available, stapling equipment is probably not as economical as alternative approaches.

The most intrusive way to close a lesion or cut is by using sutures. It is the one that demands the most talent because one person may complete it. Ask yourself why you can't use a less intrusive technique rather than suturing before you decide to do so. It's doubtful you'll ever be able to refill such supplies in a long-term survival situation.

When to Apply for First Aid

What are you hoping to achieve by closing a wound with stitches? You should have clear objectives: You bandage wounds to speed healing and fix the flaw in your body's armor. A wound that is accurately located also scars less.

Unfortunately, this is where things become tricky. Closing a wound that has to stay open might cause more harm than good and even endanger the patient's life. Closing a wound is not a decision that is made lightly and requires much thought.

The most crucial factor is whether you are working on a clean or unclean wound. In a survival situation, the majority of your wounds will be filthy. If you attempt to treat an unclean wound, you introduce bacteria and dirt into the body. The infected wound will quickly develop redness, swelling, and heat. Pus may build up inside an abscess if it does.

The patient's life could be in jeopardy if the infection spreads to the bloodstream. You can clean the inside of the wound frequently and watch it heal if you leave it open. Additionally, it allows inflammatory fluid to leave the body. Open wounds begin to heal from the inside out. Although the scar is less attractive, it is typically the safest choice.

Whether or not to stitch up a wound also depends on whether it is a simple laceration (a straight, thin cut on the skin) or an avulsion (areas of skin torn out, hanging flaps). The incision should be left exposed if the skin's edges

are too wide apart to be sewn together without putting too much strain on them. If the wound has been exposed to air for more than eight hours, it should remain since bacteria have had plenty of time to colonize it.

If the wound is long, deep, or gaped open loosely, you should close it if you are convinced that it is clean. Any kind of animal or human bite is an exception.

Stitches are more likely needed for lacerations close to moving elements, such as the knee joint. Remember that you should stitch up deep wounds in layers to avoid any potential "dead space." Dead spaces are areas of air containing germs in a closed wound that could cause a serious infection.

If in doubt, wait 72 hours before dressing a wound to be sure no infection symptoms appear. Delay in the closure is the term used to describe this. Some wounds can only be partially dressed, leaving a tiny gap to prevent inflammatory fluid from building up. This can be accomplished by inserting drains made of thin lengths of latex, nitrile, or even gauze into the incision. Of course, you should cover the exposed region with a dressing.

Antibiotics should be administered to many wounds that need to be stitched up to reduce the risk of infection. Natural medicines like raw, unprocessed honey or freshly crushed garlic may be helpful in a harsh environment.

If possible, utilize absorbable material, such as chromic catgut or VICRYL, as deep-layer sutures are never removed from the body. The body will seal off the sutures if nonabsorbable materials like silk, nylon, or prolene must be used, and they may even form a nodule called a "granuloma." Although it could be unsettling, this has little bearing on a patient's health.

Sutures over a joint should be removed in 14–21 days; skin sutures should be removed in 7 days (5 days if on the face). Over a joint, like the knee, stitches should be placed closely together. Sutures spaced at least half an inch apart are appropriate in other places. Making room for the fluid to drain from the wound is acceptable.

Commonly fractured blister

A friction blister will likely happen to anyone who has gone trekking or purchased the incorrect footwear. It can undoubtedly result in more issues

than is typical for a soft-tissue injury, although being quite minor. The terrain has caused more than one hike to end abruptly because the footwear could not manage it. Never undervalue the value of a well-fitting pair of shoes.

Your new boots should fit snugly across your entire foot:

- The broadest area of the shoe should easily accommodate the ball of your foot.
- There should be approximately a half-inch gap between your toes and the tip of your shoe.
- The shoe upper should be flexible enough to prevent irritation of your instep.
- When you walk, your heel shouldn't jump up and down.

Additional factors are crucial: Thick VibramTM or other strong material should be used for the soles. By providing extra support and providing protection against snakebites, high-cut boots will aid in the prevention of ankle sprains.

Never purchase very tight shoes and anticipate them to stretch. They might, but it will be quite uncomfortable for you to get them there. Even though you might be accustomed to purchasing shoes online, you should try them out for a bit before making a decision. Purchase one or two extra pairs of shoes while they are still in stock unless you can count shoemaking as one of your survival talents.

When chopping wood, heavier boots, such as those with steel toes, are ideal since you can keep all ten of your toes. However, they are hefty. Remember that one extra pound in your boot equals five extra pounds on your back. Waterproof materials with flexible uppers, like Gore-TexTM, are a wise investment in humid environments.

Your choice of socks affects how well your feet are doing. Even in the height of summer, most hikers continue to wear the same pair of socks all day.

Wet feet cause more friction and blisters, which is why sweaty feet are unhappy feet.

Have extra pairs of socks in your backpack at all times, and change your socks frequently. For added protection, consider wearing a thinner, second pair of socks (sock liners) under your heavier hiking socks. Using cornstarch or foot powders like Gold Bond, your feet can stay dry.

Blisters

A blister starting to form will appear as a sore, red region where friction is present. Before it becomes worse, cover it with moleskin or SpencoTM 2nd SkinTM. You can use gauze, a Band-Aid, or even duct tape if you don't have any on hand. Padding is necessary for this situation to reduce friction in the area.

Most individuals want to pop their blisters, but doing so on smaller ones could result in infection. However, large blisters are distinct. Observe these steps:

1. Use a disinfectant to clean the area. Iodine or alcohol are particularly helpful.
2. Use alcohol to disinfect a needle or heat it to a red-hot temperature.
3. Puncture the blister's side. The liquids can now drain, thanks to this. This will help with some of the discomforts and start the healing process.
4. Preserve any loose skin and protect the blister by covering it.
5. If you can, use an antibiotic cream.
6. Cut a hole in the center of a piece of moleskin or Spenco 2nd Skin that is somewhat larger than the blister.
7. Apply the moleskin with the blister in the center of the flap.
8. Use a gauze pad or other bandage to cover.
9. Try to get some rest.

Make sure the bandage prevents friction to the region if you absolutely must continue walking. Remember that bandages commonly slip off, so periodically check to ensure it's still there. To keep the bandage clean, change it periodically.

Blisters can be treated at home using a variety of methods:

- Applying a saltwater-soaked cloth as a cold compress to the blister.

- Apply a 10% tannic acid solution to the blister two to three times each day.
- To clean a broken blister, apply a few drops of ListerineTM antiseptic. For this purpose, garlic oil is also quite beneficial.
- Apply zinc oxide ointment, vitamin E oil, or aloe vera on the blister.
- Apply witch hazel three times daily on the blister to dry it out and relieve pain.

Tea tree oil can stop infections.

Splinters

A person may encounter one or more splinters from being in the woods or working with wood. Simply slit the skin around the splinter until you can grab the end with a pair of tiny forceps or tweezers. A magnifying lens will be necessary to make this operation simpler.

Use a scalpel (number 11 or 15 blades) to cut the epidermis if you can see the entire length of the splinter. Just enough of a cut should be made to expose the wooden fragment's tip. Then, with the aid of your tweezers, grip the splinter's tip and remove it by pulling in the direction it entered the skin. Remember to carefully wash the area both before and after the treatment.

Except for those under the skin for longer than 2-3 days, it's unlikely that a simple splinter will result in a serious infection. If an infection develops, redness or swelling in the area will become evident. If you want to avoid issues later, you can think about taking antibiotics in this situation.

Fishhooks

You will eventually end up with a fishhook embedded in you, possibly your hand, even if you are an experienced fisherman. Start by thoroughly washing the area with an antibacterial since the hook likely has worm guts.

Your hook most likely has a barb on one end. If it's difficult to slip out, the problem is probably with the barb. Try to pry the hook out along the shank's curvature by pressing down on the skin where the barb is located.

If not, you might need to push the fishhook more into the skin until the barbed end emerges again. Now that the barbed end has been separated from the shank, you can cut the wire with a wire cutter. After that, remove the shank by pulling on the source. Rewash the area once more, then bandage it. Keep a close eye out for infection symptoms over time.

CONCLUSION

You might wonder why this volume has not covered cardio-pulmonary resuscitation so far, as this topic usually appears in the first chapter of medical texts. The solution is based on the harsh truths we would have to face to survive.

Even though CPR is a technique that everyone should be familiar with, there are few instances in which a victim will be restored to normal function in the event of a collapse. Very few situations allow a patient to transition from being a patient in need of resuscitation to someone who is back to normal.

CPR works best as a stabilizing technique. To transfer your patient to a center with ventilators, defibrillators, and other high-tech equipment as soon as possible, you need to get their heart pumping and breathing maintained. What happens, though, if this technology becomes obsolete?

Your patient won't require a cardiac bypass if they have suffered a heart attack. Your patient will not be able to undergo surgery after receiving a shotgun blast to the chest or abdomen. The dismal reality is that many of these wounds will result in death. This means that no matter what you do, death will still happen in the end. Unfortunately, these people have such a poor prognosis, making you truly appreciate modern treatment's advantages.

THANKS FOR READING!!

Remember to leave a 5-star rating when you receive the review request from the store. Thanks.

Or click here to leave it now.

LESLEY HIDING