

+ CASE PRESENTATION +

While you are on vacation and skiing with a group of friends, one of your companions takes a hard fall. As you and the other members of your party ski up to him, you find him lying on his side, clutching his ankle. He is moaning loudly and appears to be in great distress. A quick examination reveals intense pain in the man's right lower leg/ankle, which is bent at an unnatural angle. He is awake and has no other apparent injuries but is unable to stand, let alone get down the mountain on his own.

What is the first thing you should do?

emergency care system

a network of specially trained personnel, equipment, facilities, and other resources that respond to medical emergencies. See EMS.

thanks to the advent of modern **emergency care systems**, which bring specifically trained personnel and resources to the scene of an emergency shortly after the situation occurs or symptoms become apparent. This coordinated response is part of an organized continuum of care that begins the moment the emergency care system is activated and continues long after the patient reaches the hospital.

Emergency care systems have been in use around the world since before the Pharaohs. Most early systems were conceived and implemented by the military, but they provided little more than the transportation of wounded soldiers from battlefields to nearby doctors. Today, modern emergency care systems are complex networks designed primarily for civilian use, and they bring a broad range of medical services and resources directly to the patient on scene and throughout transport to the hospital.

An emergency care system is a formal, organized network of specially trained personnel, equipment, and facilities that responds to medical emergencies, regardless of cause, location, or the patient's ability to pay. It is a portion of the overall public health system, and its purpose is to bring specialized resources to the scene of a medical emergency as soon as possible so that potential life-saving procedures can be implemented. Depending on the situation, treatment may begin at the scene and be continued until the patient arrives at a care facility. If the situation warrants it, treatment may be rendered only at the scene, thereby delaying or negating the need for additional treatment (Figure 2-1■).

In the United States, emergency care systems were born out of federal legislation enacted in the 1960s in response to the large number of highway fatalities. Later, these systems were expanded to decrease the growing number of out-of-hospital cardiac arrest-related deaths. Today's emergency care systems are designed to respond to and manage a wide variety of emergencies, both natural and human-caused. As with all aspects of health care, emergency care systems are constantly evolving to meet the ever-changing needs of the communities they serve and to reflect changes in medical knowledge, procedures, and technology. Regular monitoring helps to ensure that emergency care systems are in a constant state of readiness and will function as designed. An emergency care system requires considerable coordination and oversight to ensure that services are delivered to the highest level of quality possible and are provided in accordance with local, area, and state practices.

In many parts of the world, ski patrols, **Outdoor First Care Providers (OFC Providers)**, and **Outdoor Emergency Care Technicians (OEC Technicians)** interface with the local emergency system as they provide emergency assistance and transportation services to patients located in outdoor nonurban settings typically not served by traditional 9-1-1

Outdoor First Care (OFC)

Provider a person who has completed the NSP's Outdoor First Care course and is trained to render basic first aid in outdoor, nonurban environments.

Outdoor Emergency Care (OEC)

Technician a provider who has successfully completed the NSP's OEC course and has kept his annual refresher requirement current. CPR training, including AED training, are required of this individual.

Communication Systems in Emergency Care Systems

Communication systems are the vital links that connect all the components of the emergency care system and enables them to work together in a coordinated fashion (Figure 2-9). A typical EMS communication system consists of hardware (e.g., telephones, cell phones, radio communications equipment, and computers), software, and specialized professionals who manage these resources. Effective communications improve patient outcomes and are essential for successful rescue operations. Although communication technology has vastly improved in the past decade, communicating in prehospital environments, especially in backcountry and nonurban areas, is extremely difficult. It is for this reason that OEC Technicians should have a fundamental understanding of both the common problems that can compromise radio communications and the various NSP resources available to help make your patrol's communication system more effective.

In the United States, radio communications systems are regulated by two agencies: the Interdepartment Radio Advisory Committee (IRAC) of the Department of Commerce, which regulates radio use by federal agencies, and the Federal Communications Commission (FCC), which regulates radio use by nonfederal entities. Radio frequencies used by ski patrols must be licensed by the FCC. Unauthorized communications or unlicensed operation can result in substantial fines. The National Ski Patrol has volunteer telecommunications advisors who will assist ski patrols in complying with FCC licensing requirements. If you are a rescuer for another non-federal agency, contact the FCC (www.fcc.gov) for licensing information.

OEC Technicians communicate with each other and with other members of the emergency care system by various means, including two-way radios, landline telephones, and cell phones. Of these, portable radios are the daily workhorses for OEC Technicians (Figure 2-10). However, because of topography, portable radios used in

Figure 2-9 An overview of the transmission pathway of a radio communications call.

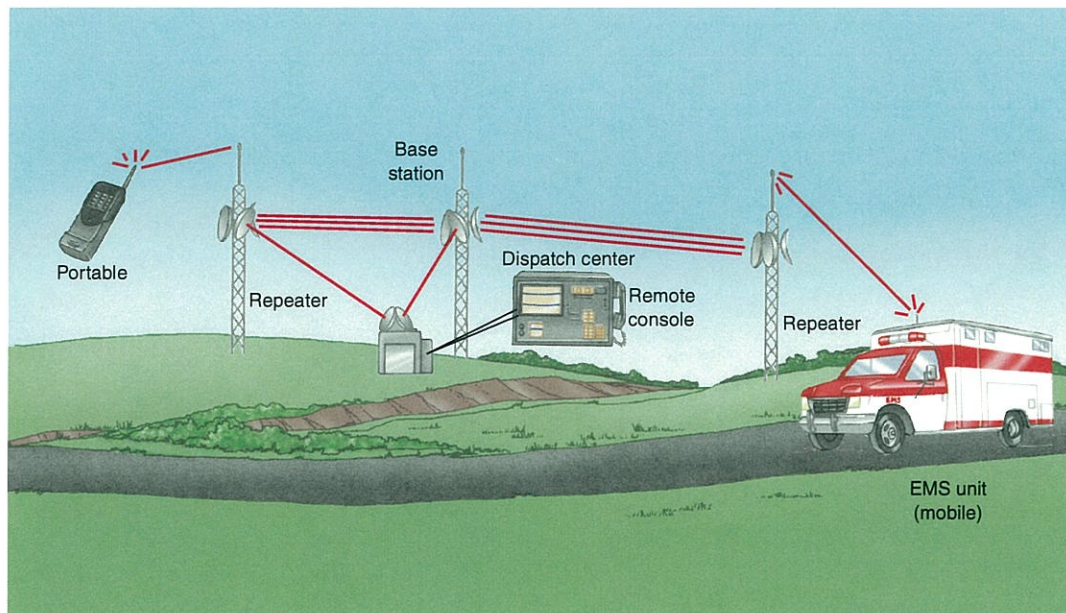




Figure 2-10 When using a portable radio, patrollers must be clear, concise, and accurate in communicating with others; using a radio entails great responsibility.
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direct, unit-to-unit communications have a limited range. This limitation can be overcome by using base stations, repeaters, or other infrastructure. NSP's volunteer telecommunications advisors can assist patrols by recommending ways to improve signal coverage.

Radio Etiquette

Communicating with others by radio entails great responsibility and must be done clearly, concisely, and accurately. This is best accomplished by observing basic radio etiquette and universally accepted terms and practices. This is especially true when lives hang in the balance and time is of the essence. Additionally, emergency radio transmissions are often monitored and recorded by other rescuers, public safety organizations, and civilian organizations such as news media, and any recordings made may be subpoenaed during legal proceedings. It is essential that OEC Technicians maintain a professional demeanor at all times when communicating via radio. Common radio etiquette tips include the following:

- ✦ Listen before beginning to transmit a message (to prevent inadvertently cutting off another rescuer's transmission).
- ✦ Press the transmit key firmly and hold it for 1–2 seconds before speaking (to prevent inadvertently cutting off the beginning of your transmission).
- ✦ Speak directly into the microphone. (Shield the microphone from wind to improve communications.)
- ✦ Speak clearly and slowly, with a normal voice. Do not shout.
- ✦ Be concise; make each transmission less than 30 seconds long.
- ✦ When finished speaking, wait 1–2 seconds before releasing the transmit key (to prevent inadvertently cutting off the end of your transmission).
- ✦ Acknowledge receipt of all transmissions.
- ✦ Do not use profanity or offensive terms.
- ✦ Do not say the patient's name (this may violate privacy laws).
- ✦ Limit communications to official business only.

Factors That Can Adversely Affect Radio Communications

- Radio transmitter power
- Antenna size
- Antenna/repeater/cell tower location
- Repeater power
- Terrain (open versus mountainous)
- Buildings
- Weather
- High-power lines
- Nearby microwave signals or fluorescent lights
- Competing electronic signals (e.g., GPS receivers, RADAR)
- Overlapping signals (e.g., multiple users on the same frequency)
 - Equipment damage (e.g., broken antenna)
 - Incompatible equipment, radio frequencies

NOTE

