CHAPTER 2

FUNDAMENTALS OF PATIENT CARE

Twentieth century advances in the medical and technological sciences have made a significant impact on the methods of marketing healthcare services. The numbers and kinds of healthcare providers have expanded greatly. Patients have become more informed about both their healthcare needs and expectations. Additionally, patients have become more vocal, seeking answers for the "what's" and "why's" of the entire spectrum of healthcare services.

The goal of this chapter is to give the Hospital Corpsman basic theory concerning the multidisciplinary aspects of patient care. This chapter is an introduction to some of the critical basic concepts for providing care to individuals seeking healthcare services.

HEALTH AND ILLNESS

LEARNING OBJECTIVE: *Recognize the concepts of health and illness.*

To intelligently and skillfully discharge your duties as a member of the Navy Medical Department healthcare team, you must first understand the concepts of health and illness.

The concept of health includes the physical, mental, and emotional condition of human beings that provide for the normal and proper performance of one's vital functions. Not only is health the absence of disease or disability; health is also a state of soundness of the body, mind, and spirit. Conversely, the concept of illness includes conditions often accompanied by pain or discomfort that inhibit a human being's ability to physically, mentally, or emotionally perform in a normal and proper manner.

In most cultures, when people need assistance in maintaining their health, dealing with illness, or coping with problems related to health and illness, they seek assistance from personnel specialized in the fields of healthcare.

Physicians, nurses, and Hospital Corpsmen are frequently referred to as the core team. All health personnel comprise the total healthcare team. Obviously, individual members of the team use their skills differently, depending upon their personal, professional, and technical preparation and experience. Nevertheless—and despite the differences in clinical expertise—they all share one common objective: to respond to the patient's health needs. The overall goal of this response is to assist the patient to maintain, sustain, and restore or rehabilitate a physical or psychological function.

THE PATIENT

LEARNING OBJECTIVE: *Recognize the Patients' Bill of Rights and Responsibilities.*

No discussion about healthcare or the healthcare team would be complete without including the patient, often referred to as the consumer. A patient is a human being under the care of one or more healthcare providers. The patient may or may not be hospitalized. However, regardless of healthcare needs or environmental disposition, the patient is the most important part of the healthcare team. Without a patient, the healthcare team has little, if any, reason for existence.

As a Hospital Corpsman, you are tasked to provide every patient committed to your charge with the best care possible. This care must reflect your belief in the value and dignity of every person as an individual. Additionally, you must understand the patient's rights and responsibilities as they apply to providing and receiving healthcare services.

The Joint Commission on Accreditation of Healthcare Organizations (JCAHO) has developed standards that address the rights and responsibilities of patients. Because the goal of JCAHO is to promote excellence in providing healthcare services, this goal is compatible with that of the Navy Medical Department. The next two sections review the rights and responsibilities of patients when they enter a relationship with a healthcare service facility. Students seeking additional detailed information

should refer to the *Patients' Bill of Rights and Responsibilities* (an enclosure to BUMEDINST 6300.10) and the *Accreditation Manual for Hospitals* published by the JCAHO.

PATIENT'S RIGHTS

The following are the patient's rights:

- **Medical Care and Dental Care**—A patient has the right to quality care and treatment consistent with available resources and generally accepted standards. The patient has the right to refuse treatment to the extent permitted by law and government regulations. However, the patient should be informed of the consequences of refusal.
- **Respectful Treatment**—A patient has the right to considerate and respectful care, with recognition of his personal dignity.
- **Privacy and Confidentiality**—A patient, within law and military regulations, is entitled to privacy and confidentiality concerning medical care.
- **Identity**—A patient has the right to know, at all times, the identity, professional status, and professional credentials of healthcare personnel, as well as the name of the healthcare provider primarily responsible for his care.
- **Explanation of Care**—A patient has the right to an explanation concerning his diagnosis, treatment, procedures, and prognosis of illness in terms the patient can understand.
- **Informed Consent**—A patient has the right to be advised in nonclinical terms of information needed to make knowledgeable decisions on consent or refusal of treatments. Such information should include significant complications, risks, benefits, and alternative treatments available.
- **Research Projects**—A patient has the right to be advised if the facility proposes to engage in or perform research associated with his care or treatment. The patient has the right to refuse to participate in any research projects.
- **Safe Environment**—A patient has the right to care and treatment in a safe environment.
- **Medical Treatment Facility (MTF) or Dental Treatment Facility (DTF) Rules and Regulations**—A patient has the right to be informed of the facility's rules and regulations that relate to patient or visitor conduct. The patient is entitled to information for the initiation, review, and resolution of patient complaints.

PATIENT'S RESPONSIBILITIES

The following are the patient's responsibilities:

- **Providing Information**—A patient has the responsibility to provide, to the best of his knowledge, accurate and complete information about complaints, past illnesses, hospitalizations, medications, and other matters relating to his personal health.
- **Respect and Consideration**—A patient has the responsibility to be considerate of the rights of other patients and MTF or DTF healthcare personnel, and to assist in the control of noise, smoking, and the number of visitors. The patient is responsible for being respectful of the property of other persons and of the facility.
- **Compliance with Medical Care**—A patient is responsible for complying with the medical and nursing treatment plan, including followup care recommended by healthcare providers.
- **Medical Records**—A patient is responsible for ensuring that medical records are promptly returned to the medical facility for appropriate filing and maintenance when those records are transported by the patient for the purpose of medical appointments or consultation, etc.
- **MTF and DTF Rules and Regulations**—A patient is responsible for following the MTF or DTF rules and regulations affecting patient care.
- **Reporting of Patient Complaints**—A patient is responsible for helping the MTF or DTF commander provide the best possible care to all beneficiaries. The patient's recommendations, questions, or complaints should be reported to the patient contact representative.

PROFESSIONAL PRACTICE

LEARNING OBJECTIVE: *Recognize the key elements of professional practice.*

Each member of the healthcare team has specific responsibilities and limitations that define his area of practice. To fulfill your role as a member of the Hospital Corps within the context of the total mission of the Navy Medical Department, it is imperative that your practice be based on a sound body of knowledge and the development of well-defined technical skills. The rate training manual (TRAMAN) contributes to the development of your body of knowledge. The HM occupational standards (NAVPERS 18068F, chapter 40) define minimal technical skills required of a Hospital Corpsman. As a member of the healthcare team, the mechanism of on-the-job training, in-service classes, and continuing education programs contribute significantly to your continued growth in both healthcare knowledge and skills.

PROFESSIONAL LIMITATIONS

In conjunction with their professional responsibilities, all healthcare providers should realize that they are subject to certain limitations in providing healthcare services. These standards of practice are based on the amount and kind of education, training, experience, local regulations, and guidelines possessed by the healthcare provider. The mature, responsible individual will recognize, accept, and demand that these limitations be respected. In clinical settings, Hospital Corpsmen are tasked with administering medication, performing treatments, and providing individual patient care in compliance with the orders of the senior healthcare provider. In the hospital and some clinical environments, a Nurse Corps officer divides and delegates portions of the patient's care to other members of the team based on the skills and experiences of each member. In situations where a Nurse Corps officer is not a member of the team, such delegation of duties will generally be made by an experienced chief petty officer or a senior petty officer of the Hospital Corps.

ACCOUNTABILITY

Regardless of rank, rate, or corps membership, all members of the healthcare team are held accountable for their performance. Being accountable means being held responsible for your actions. As a healthcare provider, you should continue to acquire new knowledge and skills and to strive for clinical competency. Equally important is your ability to apply new knowledge and acquired skills as a competent professional in providing total healthcare.

Accountability becomes a critical issue when determining issues of malpractice. Malpractice occurs when an individual delivers improper care because of negligence or practicing outside of his area of expertise. Because the areas of expertise and responsibility in medicine frequently overlap, legal limits of practice are defined by each state. The assignments and responsibilities of Hospital Corpsmen frequently include areas of practice usually provided by physicians and nurses in the civilian sector. **These responsibilities are only legal when Hospital Corpsmen are performing such duties while under the authority of the United States Government**. Because of this requirement, it is vital that you thoroughly understand your legal rights and limitations when providing patient care services both in government and civilian sectors.

PATIENT ADVICE

Another area that has potential medical and legal implications regarding your role as a healthcare provider is that of giving advice or opinions. As a result of your frequent and close contact with patients, you will often be asked your opinion of the care or the proposed care a patient is undergoing. Often, these questions are extremely difficult to respond to, regardless of who the healthcare provider is. No one is ever totally prepared or has so much wisdom that he can respond spontaneously in such situations. In such cases, it is best to refer the question to the nurse or physician responsible for the patient's care.

You must always be conscious that you are seen as a representative of Navy medicine by the recipients of your care. As such, you will be accorded the respect that goes with having a specialized body of knowledge and an inventory of unique skills. A caduceus on the sleeve of the Hospital Corpsman marks that person as a member of a prestigious corps worthy of respect.

PATIENT BEHAVIOR

Remember, you have been charged to provide care to a total, feeling, human person. The person seeking healthcare service has the same needs for security, safety, love, respect, and self-fulfillment as everyone

else. When something threatens the soundness of the body, mind, or spirit, an individual may behave inappropriately. Occasionally, there are temper outbursts, episodes of pouting, sarcastic remarks, unreasonable demands, or other inappropriate responses, often to the point of disruptive behavior. The healthcare provider is challenged to look beyond the behavior being displayed to identify the underlying stress and to attempt to relieve the immediate and obvious source of anxiety. This may be as simple as communicating, through your care and understanding of the patient as an individual, that Navy medicine is pleased to provide a caring service.

PROFESSIONAL ETHICS

LEARNING OBJECTIVE: *Recognize the concept of professional ethics.*

The word **ethics** is derived from the Greek "ethos," meaning custom or practice, a characteristic manner of acting, or a more-or-less constant style of behavior in the deliberate actions of people. When we speak of ethics, we refer to a set of rules or a body of principles. Every social, religious, and professional group has a body of principles or standards of conduct that provides ethical guidance to its members.

During your indoctrination into the military, you were introduced to the Code of the U.S. Fighting Forces. This code of conduct is an ethical guide that charges you with certain high standards of general behavior as a member of the Armed Forces.

All professional interactions must be directly related to codes of behavior that support the principles of justice, equality of human beings as persons, and respect for the dignity of human beings. Upholding medical ethics is the responsibility of all Hospital Corpsmen. Upon completion of basic Hospital Corps School, you took the following pledge:

> I solemnly pledge myself before God and these witnesses to practice faithfully all of my duties as a member of the Hospital Corps. I hold the care of the sick and injured to be a privilege and a sacred trust and will assist the Medical Officer with loyalty and honesty. I will hold all personal matters pertaining to the private lives of patients in strict confidence. I dedicate my heart, mind, and strength to the work before me. I shall do all within my power to show in myself an example of all that is honorable and good throughout my naval career.

This pledge morally binds you to certain responsibilities and rules that are included in the science of medical ethics. Ethics, whether they be classified general or special (e.g., legal or medical), teach us how to judge accurately the moral rightness and wrongness of our actions. The one element that makes healthcare ethics different from general ethics is the inclusion of the moral rule, "Do your duty." This statement is a moral rule because it involves expectations (e.g., of confidentiality). It involves what others have every reason to believe will be forthcoming. Failure to fulfill these expectations is to do harm to your clients (i.e., your patients) and/or your colleagues. Through the Hospital Corpsman Pledge, you committed yourself to fulfilling certain duties, not only to those entrusted to your care, but also to all members of the healthcare team. It is this commitment to service and to mankind that has traditionally distinguished the United States Navy Hospital Corps wherever its members have served.

PERSONAL TRAITS

LEARNING OBJECTIVE: *Recognize important personality traits of a healthcare professional.*

A Hospital Corpsman must develop many personal traits that apply to all petty officers. You can get a general understanding of them by referring to *Military Requirements for Petty Officer Third Class* (NAVEDTRA 12024).

The following traits, however, apply especially to your Hospital Corps duties and are essential for good performance.

INTEGRITY

Nowhere in the Navy is the need for personal integrity so great as in the Hospital Corps, where we deal continually with people, their illnesses, and their personal problems. The information that we have access to falls into the category of "privileged communication." We, as Hospital Corpsmen, have no right whatsoever to divulge any medical information, however trivial, to any unauthorized individuals.

Medical information is prime gossip material. The prohibition on the release of medical information is sometimes difficult to remember, but it is essential to the maintenance of professional integrity.

One important commitment that all Corps personnel have is the obligation never to abuse the controlled substances that we have access to—or to tolerate abuse by others. These substances are on the ward or in the mount-out block for use, under a medical officer's supervision, for the care of patients. Any other use must not be tolerated.

PERSONAL APPEARANCE

Excellent personal hygience habits, including cleanliness, neat hair styles, and spotless, correct uniforms are essential for the Hospital Corps. Our appearance can positively or negatively influence the opinion the public has of the medical community. Both a professional appearance and attitude enhance the overall reputation of the Navy Medical Department and reinforce our role as competent healthcare providers.

LEADERSHIP

Naval leadership is based on personal example, good management, and moral responsibility. All of the personal traits previously discussed are also considered leadership traits. You will learn that many examples of effective leadership are those that are set by officers, chief petty officers, and senior petty officers. The success of the Medical Department rests heavily on the petty officer. Good petty officers are the backbone of the Medical Department, whether they are supervising military personnel or conducting specialist duties.

INTERPERSONAL RELATIONS

LEARNING OBJECTIVE: *Recognize how an understanding of a patient's culture, race, religion, sex, and age can affect interpersonal relations.*

As a healthcare provider, you must be able to identify, understand, and use various kinds of information. In addition, it is important that you develop good "interpersonal relations" skills. In providing total patient care, it is important that you see the individual not only as a biological being, but also as a thinking, feeling person. Your commitment to understanding this concept is the key to your developing good interpersonal relationships.

Simply stated, your interpersonal relationships are the result of how you regard and respond to people. Many elements influence the development of that regard and those responses. In the following discussion, some of these elements will be discussed as they apply to your involvement in the military service and to your relationships with other healthcare providers and the patient.

CULTURE

Because of the multi- and cross-cultural nature and military mission of the Navy Medical Department, you will frequently encounter members of various cultures. **Culture** is defined as a group of socially learned, shared standards (norms) and behavior patterns. Concepts such as perceptions, values, beliefs, and goals are examples of shared norms. In addition, apparel, eating habits, and personal hygiene reflect common behavior patterns of specific groups of people. An understanding of common norms and behavior patterns enhances the quality—and often the quantity—of service a provider is able to make available. An individual's cultural background has an effect on every area of healthcare service, ranging from a simple technical procedure to the content and effectiveness of health education activities. Becoming familiar with the beliefs and practices of different cultural and subcultural groups (the military community, for example) is not only enriching to the healthcare provider, but also promotes an understanding and acceptance of the various peoples in the world community.

RACE

The term **race** is a classification assigned to a group of people who share inherited physical characteristics. This term becomes a socially significant reality since people tend to attach great importance to assuming or designating a racial identity. Information identifying racial affiliation can be an asset to the healthcare provider in assessing the patient's needs, carrying out direct-care activities, and planning and implementing patient education programs. Racial identification has the potential to create a negative environment in the healthcare setting when factors such as skin color differences motivate

prejudicial and segregational behaviors. When this is permitted to occur, an environment that feeds a multitude of social illnesses and destructive behaviors develops. In the Navy Medical Department, no expressions or actions based on prejudicial attitudes will be tolerated.

It is both the moral and legal responsibility of the healthcare provider to render services with respect for the life and human dignity of the individual without regard to race, creed, gender, political views, or social status.

RELIGION

A large majority of people have some form of belief system that guides many of their life decisions and to which they turn to in times of distress. A person's religious beliefs frequently help give meaning to suffering and illness; those beliefs may also be helpful in the acceptance of future incapacities or death.

As a healthcare professional, you must accept in a nonjudgmental way the religious or nonreligious beliefs of others as valid for them, even if you personally disagree with such beliefs. Although you may offer religious support when asked and should always provide chaplain referrals when requested or indicated, it is not ethical for you to abuse your patients by forcing your beliefs (or nonbeliefs) upon them. You must respect their freedom of choice, offering your support for whatever their needs or desires may be.

GENDER

In today's Navy, you will encounter many situations where you are responsible for the care and treatment of service members of the opposite sex. When you treat service members of the opposite sex, you must always conduct yourself in a professional manner.

To ensure the professional conduct of a healthcare provider is not called into question, the Navy Medical Department provides specific guidelines in BUMEDINST 6320.83, *Provisions of Standbys During Medical Examinations*. Some of these guidelines are as follows:

- A standby should be present when you are examining or treating a member of the opposite sex. Whether this standby is a member of the same sex as the patient may be dictated by the availability of personnel.

- Common sense dictates that when you are caring for a patient, sensitivity to both verbal and nonverbal communication is paramount. A grin, a frown, or an expression of surprise may all be misinterpreted by the patient.

- Explanations and reassurances will go far in preventing misunderstandings of actions or intentions.

Knowledge, empathy, and mature judgment should guide the care provided to any patient. This is especially crucial when the care involves touching. As a member of the healthcare team, you are responsible for providing complete, quality care to those who need and seek your service. This care must also be provided in a manner compatible with your technical capabilities.

AGE

The age of the patient must be considered in performance of patient care. As a Hospital Corpsman, you will be responsible for the care of infants, children, adults, and the elderly. Communication techniques and patient handling may need to be modified because of the age of the patient.

Infants and Children

Infants can communicate their feelings in a variety of positive and negative ways, and they exhibit their needs by crying, kicking, or grabbing at the affected area of pain. An infant, however, usually responds positively to cuddling, rocking, touching, and soothing sounds.

Children need emotional support and display the same feelings an adult would when ill: fear, anger, worry, and so on. When ill, children may display behavior typical for an earlier age. For example, when hospitalized, a child who has been toilet trained may soil himself. This is not unusual, and parents should be informed that this behavior change is temporary. While the child is under your care in the hospital, you are a parent substitute and must gain the child's confidence and trust. Offer explanations of what you are going to do in ways the child will understand.

Elderly

In taking care of the elderly patient, a healthcare professional must be alert to the patient's mental and

physical capabilities (i.e., physical coordination, mental orientation, reduced eyesight). Medical management should be modified to accommodate the individual patient. Show genuine respect and warmth with the elderly. Avoid using terms like "gramps" or "granny." You should always show the elderly respect by treating them as the adults they are.

Give older patients the opportunity to control as many aspects of their self-care as possible. Allowing patients to self-pace their own care may take more time, but it will result in reducing their feelings of frustration, anger, and resentment. Listen to patients and allow them to reminisce if they wish to. The conversation can be used as a vehicle to bring today's events into focus for the patient. Remember to involve family members, as needed, into the patient education process. Some of your elderly patients will require assistance from family members for their medical needs once they are back home.

COMMUNICATION SKILLS

LEARNING OBJECTIVE: *Recognize communication techniques used in a healthcare setting.*

Communication is a highly complicated interpersonal process of people relating to each other through conversation, writing, gestures, appearance, behavior, and, at times, even silence. Such communications not only occur among healthcare providers and patients, but also among healthcare providers and support personnel. Support personnel may include housekeeping, maintenance, security, supply, and food service staff. Another critical communication interaction occurs among healthcare providers and visitors. Because of the critical nature of communication in healthcare delivery, it is important that you understand the communication process and the techniques used to promote open, honest, and effective interactions. It is only through effective communication that you are able to identify the goals of the individual and the Navy healthcare system.

THE COMMUNICATION PROCESS

The human communication process consists of four basic parts: the sender of the message, the message, the receiver of the message, and feedback.

The sender of the message starts the process. The message is the body of information the sender wishes to transmit to the receiver. The receiver is the individual intended to receive the message. Feedback is the response given by the receiver to the message. Feedback, at times, is used to validate whether effective communication has taken place.

Verbal and Nonverbal Communication

The two basic modes of communication are verbal and nonverbal. Verbal communication is either spoken or written. Verbal communication involves the use of words. Nonverbal communication, on the other hand, does not involve the use of words. Dress, gestures, touching, body language, face and eye behavior, and even silence are forms of nonverbal communication. Remember that even though there are two forms of communication, both the verbal and the nonverbal are inseparable in the total communication process. Conscious awareness of this fact is extremely important because your professional effectiveness is highly dependent upon successful communication.

Barriers to Effective Communication

Ineffective communication occurs when obstacles or barriers are present. These barriers are classified as physiological, physical, or psychosocial. **Physiological barriers** result from some kind of sensory dysfunction on the part of either the sender or the receiver. Such things as hearing impairments, speech defects, and even vision problems influence the effectiveness of communication. **Physical barriers** consist of elements in the environment (such as noise) that contribute to the development of physiological barriers (such as the inability to hear). **Psychosocial barriers** are usually the result of one's inaccurate perception of self or others; the presence of some defense mechanism employed to cope with some form of threatening anxiety; or the existence of factors such as age, education, culture, language, nationality, or a multitude of other socioeconomic factors. Psychological barriers are the most difficult to identify and the most common cause of communication failure or breakdown. A person's true feelings are often communicated more accurately through nonverbal communication than through verbal communication.

Listening

Listening, a critical element of the communication process, becomes the primary activity for the healthcare provider, who must use communication as a

tool for collecting or giving information. When one is engaged in listening, it is important to direct attention to both the verbal and nonverbal cues provided by the other person. Like many other skills necessary for providing a healthcare service, listening requires conscious effort and constant practice. Your listening skills can be improved and enhanced by developing the following attitudes and skills:

- Hear the speaker out.
- Focus on ideas.
- Remove or adjust distractions.
- Maintain objectivity.
- Concentrate on the immediate interaction.

As a healthcare provider, you will be using the communication process to service a patient's needs, both short and long-term. To simplify this discussion, short-term needs will be discussed under the heading of "patient contact point." Long-term needs will be discussed under the heading of "therapeutic communications."

PATIENT CONTACT POINT

To give you a frame of reference for the following discussion, the following definitions will clarify and standardize some critical terms:

- **Initial contact point**—The physical location where patients experience their first communication encounter with a person representing, in some role, the healthcare facility.
- **Contact point**—The place or event where the contact point person and the patient meet. The contact point meeting can occur anywhere in a facility and also includes telephone events.
- **Contact point person**—The healthcare provider in any healthcare experience who is tasked by role and responsibility to provide a service to the patient.

The contact point person has certain criteria to meet in establishing a good relationship with the patient. Helping the patient through trying experiences is partially the responsibility of all contact point personnel. Such healthcare providers must not only have skills related to their professional assignment, but they must also have the ability to interact in a positive, meaningful way to communicate concern and the desire to provide a service.

Consumers of healthcare services expect to be treated promptly, courteously, and correctly. They expect their care to be personalized and communicated to them in terms they understand. The Navy healthcare system is a service system, and it is the responsibility of every healthcare provider to give professional, quality customer service.

The significance of the contact point and the responsibility of the personnel staffing this area are important to emphasize. The following message from a former Surgeon General of the Navy reflects the philosophy of the Navy Medical Department regarding contact point interactions.

> Some of the most frequent complaints received by the Commander, Bureau of Medicine and Surgery, are those pertaining to the lack of courtesy, tact, and sympathetic regard for patients and their families exhibited by Medical Department personnel and initial points of contact within Navy Medical facilities. These points of initial patient contact, which include central appointment desks, telephones, patient affairs offices, emergency rooms, pharmacies, laboratories, record offices, information desks, walk-in and specialty clinics, and gate guards, are critical in conveying to the entering patient the sense that Navy Medicine is there to help them. The personnel, both military and civilian, who man these critical areas are responsible for ensuring that the assistance that they provide is truly reflective of the spirit of "caring" for which the Navy Medical Department must stand.
>
> No matter how excellent and expert the care in the facility may be, an early impression of nonchalance, disregard, rudeness, or neglect of the needs of patients reflects poorly on its efforts and achievements. Our personnel must be constantly on their guard to refrain from off-hand remarks or jokes in the presence of patients or their families. We must insist that our personnel in all patient areas are professional in their attitudes. What may be commonplace to us may be to a patient frightening or subject to misinterpretation.
>
> By example and precept, we must insist that, in dealing with our beneficiaries, no complaint is ever too trivial not to deserve the best response of which we are capable. . . .

THERAPEUTIC COMMUNICATION

A distinguishing aspect of therapeutic communication is its application to long-term communication interactions. Therapeutic communication is defined as the face-to-face process of interacting that focuses on advancing the physical and emotional well-being of a patient. This kind of communication has three general purposes: collecting information to determine illness, assessing and modifying behavior, and providing health education. By using therapeutic communication, we attempt to learn as much as we can about the patient in relation to his illness. To accomplish this learning, both the sender and the receiver must be consciously aware of the confidentiality of the information disclosed and received during the communication process. You must always have a therapeutic reason for invading a patient's privacy.

When used to collect information, therapeutic communication requires a great deal of sensitivity as well as expertise in using interviewing skills. To ensure the identification and clarification of the patient's thoughts and feelings, you, as the interviewer, must observe his behavior. Listen to the patient and watch how he listens to you. Observe how he gives and receives both verbal and nonverbal responses. Finally, interpret and record the data you have observed.

As mentioned earlier, listening is one of the most difficult skills to master. It requires you to maintain an open mind, eliminate both internal and external noise and distractions, and channel attention to all verbal and nonverbal messages. Listening involves the ability to recognize pitch and tone of voice, evaluate vocabulary and choice of words, and recognize hesitancy or intensity of speech as part of the total communication attempt. The patient crying aloud for help after a fall is communicating a need for assistance. This cry for help sounds very different from the call for assistance you might make when requesting help in transcribing a physician's order.

The ability to recognize and interpret nonverbal responses depends upon consistent development of observation skills. As you continue to mature in your role and responsibilities as a member of the healthcare team, both your clinical knowledge and understanding of human behavior will also grow. Your growth in both knowledge and understanding will contribute to your ability to recognize and interpret many kinds of nonverbal communication. Your sensitivity in listening with your eyes will become as refined as—if not better than—listening with your ears.

The effectiveness of an interview is influenced by both the amount of information and the degree of motivation possessed by the patient (interviewee). Factors that enhance the quality of an interview consist of the participant's knowledge of the subject under consideration; his patience, temperament, and listening skills; and your attention to both verbal and nonverbal cues. Courtesy, understanding, and nonjudgmental attitudes must be mutual goals of both the interviewee and the interviewer.

Finally, to function effectively in the therapeutic communication process, you must be an informed and skilled practitioner. Your development of the required knowledge and skills is dependent upon your commitment to seeking out and participating in continuing education learning experiences across the entire spectrum of healthcare services.

PATIENT EDUCATION

LEARNING OBJECTIVE: *Recognize the importance of patient education.*

Patient (health) education is an essential part of the healthcare delivery system. In the Navy Medical Department, patient education is defined as "the process that informs, motivates, and helps people adapt and maintain healthful practices and life styles." Specifically, the goals of this process are to

- assist individuals acquire knowledge and skills that will promote their ability to care for themselves more adequately;
- influence individual attitudinal changes from an orientation that emphasizes disease to an orientation that emphasizes health; and
- support behavioral changes to the extent that individuals are willing and able to maintain their health.

All healthcare providers, whether they recognize it or not, are teaching almost constantly. Teaching is a unique skill that is developed through the application of principles of learning. Patient teaching begins with an assessment of the patient's knowledge. Through this assessment, learning needs are identified. For example, a diabetic patient may have a need to learn how to self-administer an injection. After the learner's

needs have been established, goals and objectives are developed. Objectives inform the learner of what kind of (learned) behavior is expected. Objectives also assist the healthcare provider in determining how effective the teaching has been. These basic principles of teaching/learning are applicable to all patient-education activities, from the simple procedure of teaching a patient how to measure and record fluid intake/output to the more complex programs of behavior modification in situations of substance abuse (i.e., drug or alcohol) or weight control.

As a member of the healthcare team, you share a responsibility with all other members of the team to be alert to patient education needs, to undertake patient teaching within the limitation of your own knowledge and skills, and to communicate to other team members the need for patient education in areas you are not personally qualified to undertake.

REPORTING AND ASSESSMENT PROCEDURES

LEARNING OBJECTIVE: *Recall proper patient care reporting and assessment procedures.*

Although physicians determine the overall medical management of a person requiring healthcare services, they depend upon the assistance of other members of the healthcare team when implementing and evaluating that patient's ongoing treatment. Nurses and Hospital Corpsmen spend more time with hospitalized patients than all other providers. This situation places them in a key position as data-collecting and -reporting resource persons.

The systematic gathering of information is called **data collection** and is an essential aspect in assessing an individual's health status, identifying existing problems, and developing a combined plan of action to assist the patient in his health needs. The initial assessment is usually accomplished by establishing a health history. Included in this history are elements such as previous and current health problems; patterns of daily living activities, medication, and dietary requirements; and other relevant occupational, social, and psychological data. Additionally, both subjective and objective observations are included in the initial assessment gathering interview and throughout the course of hospitalization.

REPORTING

Accurate and intelligent assessments are the basis of good patient care and are essential elements for providing a total healthcare service. You must know what to watch for and what to expect. It is important to be able to recognize even the slightest change in a patient's condition, since such changes indicate a definite improvement or deterioration. You must be able to recognize the desired effects of medication and treatments, as well as any undesirable reactions to them. Both of these factors may influence the physician's decision to continue, modify, or discontinue parts or all of the treatment plan.

Oral and Written Reporting

Equally as important as assessments is the reporting of data and observations to the appropriate team members. Reporting consists of both oral and written communications and, to be effective, must be done accurately, completely, and in a timely manner. Written reporting, commonly called **recording**, is documented in a patient's clinical record. Maintaining an accurate, descriptive clinical record serves a dual purpose: It provides a written report of the information gathered about the patient, and it serves as a means of communication to everyone involved in the patient's care. The clinical record also serves as a valuable source of information for developing a variety of care-planning activities. Additionally, the clinical record is a legal document and is admissible as evidence in a court of law in claims of negligence and malpractice. Finally, these records serve as an important source of material that can be used for educating and training healthcare personnel and for conducting research and compiling statistical data.

Basic Guidelines for Written Entries

It is imperative that you follow some basic guidelines when you make written entries in the clinical record. All entries must be recorded accurately and truthfully. Omitting an entry is as harmful as making an incorrect recording. Each entry should be concise and brief; therefore, avoid extra words and vague notations. Recordings must be legible. If an error is made, it must be deleted following the standard Navy policy for correcting erroneous written notations. Finally, your entries in

the clinical record must include the time and date, your signature, and your rate or rank.

SOAP Note Format

SOAP stands for SUBJECTIVE, OBJECTIVE, ASSESSMENT, and PLAN. Medical documentation of patient complaint(s) and treatment must be consistent, concise, and comprehensive. The Navy Medical Department uses the SOAP note format to standardize medical evaluation entries made in clinical records. The four parts of a SOAP note are discussed below. For more detailed instructions, refer to chapter 16 of the MANMED.

SUBJECTIVE.—The initial portion of the SOAP note format consists of subjective observations. These are symptoms verbally given to you by the patient or by a significant other (family or friend). These subjective observations include the patient's descriptions of pain or discomfort, the presence of nausea or dizziness, and a multitude of other descriptions of dysfunction, discomfort, or illness.

OBJECTIVE.—The next part of the format is the objective observation. These objective observations include symptoms that you can actually see, hear, touch, feel, or smell. Included in objective observations are measurements such as temperature, pulse, respiration, skin color, swelling, and the results of tests.

ASSESSMENT.—Assessment follows the objective observations. Assessment is the diagnosis of the patient's condition. In some cases the diagnosis may be clear, such as a contusion. However, an assessment may not be clear and could include several diagnosis possibilities.

PLAN.—The last part of the SOAP note is the plan. The plan may include laboratory and/or radiologic tests ordered for the patient, medications ordered, treatments performed (e.g., minor surgery procedure), patient referrals (sending patient to a specialist), patient disposition (e.g., binnacle list, Sick-in-Quarters (SIQ), admission to hospital), patient directions, and follow-up directions for the patient.

SELF-QUESTIONING TECHNIQUES FOR PATIENT ASSESSMENT AND REPORTING

Table 2-1 outlines the self-questioning techniques for patient assessment and reporting is a good guide to assist you in developing proficiency in assessing and reporting patient conditions.

INPATIENT CARE

A patient will often require inpatient care, whether due to injury or illness. Frequently, the inpatient will need specialized treatments, perhaps even surgery. In this part of the chapter, we will discuss the procedures for assisting both the medical inpatient and the surgical inpatient.

THE MEDICAL PATIENT

LEARNING OBJECTIVE: *Evaluate the needs of a medical patient.*

For purposes of this discussion, the term **medical patient** applies to any person who is receiving diagnostic, therapeutic, and/or supportive care for a condition that is not managed by surgical-, orthopedic-, psychiatric-, or maternity-related therapy. This is not to infer that patients in these other categories are not treated for medical problems. Many surgical, orthopedic, psychiatric, and maternity patients do have secondary medical problems that are treated while they are undergoing management for their primary condition. Although many medical problems can be treated on an outpatient basis, this discussion will address the hospitalized medical patient. It should be noted that the basic principles of management are essentially the same for both the inpatient and outpatient.

The medical management of the patient generally consists of laboratory and diagnostic tests and procedures, medication, food and fluid therapy, and patient teaching. Additionally, for many medical patients, particularly during the initial treatment phase, rest is a part of the prescribed treatment.

Laboratory Tests And Diagnostic Procedures

A variety of laboratory and diagnostic tests and procedures are commonly ordered for the medical patient. Frequently, the Hospital Corpsman is assigned to prepare the patient for the procedure, collect the specimens, or assist with both the procedure and specimen collection. Whether a specimen is to be collected or a procedure is to be performed, the patient needs a clear and simple explanation about what is to

Table 2–1.—Self-Questioning Techniques for Patient Assessment and Reporting

Area of Concern	Assessment Criteria
General Appearance	Is the patient • of average build, short, tall, thin, or obese? • well-groomed? • apparently in pain? • walking with a limp, wearing a cast, walking on crutches, or wearing a prosthetic extremity?
Behavior	Does the patient • appear worried, nervous, excited, depressed, angry, disoriented, confused, or unconscious? • refuse to talk? • communicate thoughts in a logical order or erratically? • lisp, stutter, or have slurred speech? • appear sullen, bored, aggressive, friendly, or cooperative? • sleep well or arouse early? • sleep poorly, moan, talk, or cry out when sleeping? • join ward activities? • react well toward other patients, staff, and visitors?
Position	Does the patient • remain in one position in bed? • have difficulty breathing while in any position? • use just one pillow or require more pillows to sleep well? • move about in bed without difficulty?
Skin	Is the patient's skin • flushed, pale, cyanotic (bluish hue), hot, moist, clammy, cool, or dry? • bruised, scarred, lacerated, scratched, or showing a rash, lumps, or ulcerations? • showing signs of pressure, redness, mottling, edema, or pitting edema? • appearing shiny or stretched? • perspiring profusely? • infested with lice?
Eyes	Are the patient's • eyelids swollen, bruised, discolored, or dropping? • sclera (whites of eyes) clear, dull, yellow, or bloodshot? • pupils constricted or dilated, equal in size, react equally to light? • eyes tearing or showing signs of inflammation or discharge? • complaints about pain; burning; itching; sensitivity to light; or blurred, double, or lack of vision?
Ears	Does the patient • hear well bilaterally? • hold or pull on his ears? • complain of a buzzing or ringing sound? • have a discharge or wax accumulation? • complain of pain?
Nose	Is the patient's • nose bruised, bleeding, or difficult to breathe through? • nose excessively dry or dripping? Are the patient's nares (nasal openings) equal in size? Is the patient sniffling excessively?
Mouth	Does the patient's • mouth appear excessively dry? • breath smell sweet, sour, or of alcohol? • tongue appear dry, moist, clean, coated, cracked, red, or swollen? • gums appear inflamed, ulcerated, swollen, or discolored? • teeth appear white, discolored, broken, or absent? Does the patient • wear dentures, braces, or partial plates? • complain of mouth pain or ulcerations? • complain of an unpleasant taste?

Table 2–1.—Self-Questioning Techniques for Patient Assessment and Reporting—Continued

Area of Concern	Assessment Criteria
Chest	Does the patient • have shortness of breath, wheezing, gasping, or noisy respirations? cough? • have a dry, moist, hacking, productive, deep, or persistent cough? • have white, yellow, rusty, or bloody sputum? – Is it thin and watery or thick and purulent (containing pus)? – How much is produced? – Does it have an odor? • complain of chest pain? – Where is the pain? – Is the pain a dull ache, sharp, crushing, or radiating? – Is the pain relieved by resting? – Is the patient using medication to control the pain (i.e., nitroglycerin)?
Abdomen	Does the patient • have an abdomen that looks or feels distended, boardlike, or soft? • have a distended abdomen, and, if so, is the abdomen distended above or below the umbilicus or over the entire abdomen? • belch excessively? • feel nauseated, or has he vomited? – If so, how often, and when? – What is the volume, consistency, and odor of the vomitus? – Is it coffee ground, bilious (containing bile), or bloody in appearance? – Is patient vomiting with projectile force?
Bladder & Bowel	Does the patient have • bladder and bowel control? • normal urination volume and frequency? – Does the urine have an odor? – Is the urine dark amber or bloody? – Is the urine cloudy; does it have sediment in it? – Is there pain, burning, or difficulty when voiding? • diarrhea, soft stools, or constipation? – What is the color of the stool? – Does the stool contain blood, pus, fat, or worms? – Does the patient have hemorrhoids, fistulas, or rectal pain?
Vagina or Penis	Does the patient have • ulcerations or irritations? • a discharge or foul odor? – If there is a discharge present, is it bloody, purulent, mucoid (containing mucous), or watery? – What is the amount? • associated pain? – If pain is present, where is it located? – Is it constant or intermittent? – Is it tingling, dull, aching, burning, gnawing, cramping, or crushing?
Food & Fluid Intake	Does the patient • have a good, fair, or poor appetite? • get thirsty often? • have any kind of food intolerance?
Medications	Does the patient • take any medications? (If so: what, why, and when last taken?) • have medications with him? • have any history of medication reactions or allergies?

be done and what the patient can do to assist with the activity. Often the success of the test or procedure is dependent upon the patient's informed cooperation. When collecting specimens, the Hospital Corpsman must complete the following procedures:

- Collect the correct kind and amount of specimen at the right time.
- Place the specimen in the correct container.
- Label the container completely and accurately. This often differs somewhat for each facility, and local policies should be consulted.
- Complete the laboratory request form accurately.
- Record on the patient's record or other forms, as appropriate; the date, time, kind of specimen collected; the disposition of the specimen; and anything unusual about the appearance of the specimen or the patient during the collection.

When assisting with a diagnostic procedure, the Hospital Corpsman must understand the sequence of steps of the procedure and exactly how the assistance can best be provided. Since many procedures terminate in the collection of a specimen, the above principles of specimen collecting must be followed.

Following the completion of a procedure or specimen collection, it is the responsibility of the assisting Hospital Corpsman to ensure that the patient's safety and comfort are attended to, the physician's orders accurately followed, and any supplies or equipment used appropriately discarded.

Medications

A major form of therapy for the treatment of illness is the use of drugs. It is not uncommon for the medical patient to be treated with several drugs. As members of the healthcare team, Hospital Corpsmen assigned to preparing and administering medications are given a serious responsibility demanding constant vigilance, integrity, and special knowledge and skills. The preparation and administration of medications were addressed in great detail in the Hospital Corps School curriculum. References and the continued in-service training devoted to medication administration at all medical facilities support the importance of accurate preparation and administration of drugs.

An error—which also includes omissions—can seriously affect a patient, even to the point of causing death. Each Hospital Corpsman is responsible for his own actions, and this responsibility cannot be transferred to another. No one individual is expected to know all there is to know about all patients and medications. However, in every healthcare environment, the Hospital Corpsman can access other healthcare providers who can assist in clarifying orders; explaining the purposes, actions, and effects of drugs; and, in general, answering any questions that may arise concerning a particular patient and that patient's medications. There should be basic drug references available to all personnel handling medications, including the *Physicians' Desk Reference* and a hospital formulary. As a Hospital Corpsman, it is your responsibility to consult these members of the team and these references for assistance in any area in which you are not knowledgeable or whenever you have questions or doubts. You are also responsible for knowing and following local policies and procedures regarding the administration of medications.

Food and Fluid Therapy

The following brief discussion covers food and fluid and how it relates specifically to the medical patient. Loss of appetite, food intolerance, digestive disturbances, lack of exercise, and even excessive weight gain influence a medical patient's intake requirements. Regardless of their medical problems, patients have basic nutritional needs that frequently differ from those of the healthy person. As a part of the patient's therapeutic regimen, food is usually prescribed in the form of a special diet. Regardless of the kind of diet prescribed, the patient must understand why certain foods are ordered or eliminated, and how compliance with the regimen will assist in his total care. It is the responsibility of the Corpsman to assist the patient in understanding the importance of the prescribed diet and to ensure that accurate recording of the patient's dietary intake is made on the clinical record.

In many disease conditions, the patient is unable to tolerate food or fluids or may lose these through vomiting, diarrhea, or both. In these cases, replacement fluids as well as nutrients are an important part of the patient's medical management. On the other hand, there are several disease conditions in which fluid restrictions are important aspects of the patient's therapy. In both of these instances, accurate measurement and recording of fluid intake and output must be carefully performed. Very frequently this becomes a major task of the staff Hospital Corpsman.

Patient Teaching

Earlier in this chapter, under "Patient Education," the goals and principles of patient teaching were addressed. When taken in the context of the medical patient, there are some general areas of patient teaching needs that must be considered, particularly as the patient approaches discharge from an inpatient status. Those areas include the following:

- Follow-up appointments
- Modification in daily living activities and habits
- Modification in diet, including fluid intake
- Medications and treatment to be continued after discharge
- Measures to be taken to promote health and prevent illness

Rest

The primary reason for prescribing rest as a therapeutic measure for the medical patient is to prevent further damage to the body or a part of the body when the normal demand of use exceeds the ability to respond. However, prolonged or indiscriminate use of rest—particularly bed rest—is potentially hazardous. Some of the common complications occurring as a result of prolonged bed rest are

- circulatory problems (such as development of thrombi and emboli) and subsequent skin problems (such as decubiti);
- respiratory problems (such as atelectasis and pneumonia);
- gastrointestinal problems (such as anorexia, constipation, and fecal impactions);
- urinary tract problems (such as retention, infection, or the formation of calculi);
- musculoskeletal problems (such as weakness, atrophy, and the development of contractures); and
- psychological problems (such as apathy, depression, and temporary personality changes).

The prevention of complications is the key concept in therapeutic management for the patient on prolonged bed rest. Awareness of the potential hazards is the first step in prevention. Alert observations are essential: Skin condition, respirations, food and fluid intake, urinary and bowel habits, evidence of discomfort, range of motion, and mood are all critical elements that provide indications of impending problems. When this data is properly reported, the healthcare team has time to employ measures that will arrest the development of preventable complications.

THE SURGICAL PATIENT

LEARNING OBJECTIVE: *Evaluate the needs of a surgical patient during the preoperative, operative, recovery, and postoperative phases of his treatment.*

Surgical procedures are classified into two major categories: emergency and elective. Emergency surgery is that required immediately to save a life or maintain a necessary function. Elective surgery is that which, in most cases, needs to be done but can be scheduled at a time beneficial to both the patient and the provider. Regardless of the type of surgery, every surgical patient requires specialized care at each of four phases. These phases are classified as **preoperative**, **operative, recovery**, and **postoperative**. The following discussion will address the basic concepts of care in each phase.

Preoperative Phase

Before undergoing a surgical procedure, the patient must be in the best possible psychological, spiritual, and physical condition. Psychological preparation begins the moment the patient learns of the necessity of the operation. The physician is responsible for explaining the surgical procedure to the patient, including the events that can be expected after the procedure. Since other staff personnel reinforce the physician's explanation, all members of the team must know what the physician has told the patient. In this manner, they are better able to answer the patient's questions. All patients approaching surgery are fearful and anxious. The staff can assist in reducing this fear by instilling confidence in the patient regarding the competence of those providing care. The patient should be given the opportunity and freedom to express any feelings or fears concerning the proposed procedure. Even in an emergency, it is possible to give a patient and the family psychological support. Often this is accomplished simply by the confident and skillful manner in which the administrative and physical preoperative preparation is performed.

The fears of presurgical patients derive from their insecurities in the areas of anesthesia, body disfigurement, pain, and even death. Frequently, religious faith is a source of strength and courage for these patients. If a patient expresses a desire to see a clergyman, every attempt should be made to arrange a visit.

ADMINISTRATIVE PREPARATION.—Except in emergencies, the administrative preparation usually begins before surgery. A step-by-step procedure is outlined in *Fundamental Skills and Concepts in Patient Care,* "Caring for the Patient Undergoing Surgery." Only the Request for Administration of Anesthesia and for Performance of Operations and Other Procedures (SF 522) will be addressed here. The SF 522 identifies the operation or procedure to be performed; has a statement written for the patient indicating in lay terms a description of the procedure; and includes the signatures of the physician, patient, and a staff member who serves as a witness. An SF 522 must be completed before any preoperative medications are administered. If the patient is not capable of signing the document, a parent, legal guardian, or spouse may sign it. It is customary to require the signature of a parent or legal guardian if the patient is under 21 years of age, unless the patient is married or a member of the Armed Forces. In these latter two cases, the patient may sign his own permit, regardless of age.

Normally, the physical preparation of the patient begins in the late afternoon or early evening the day before surgery. As with the administrative preparation, each step is clearly outlined in *Fundamental Skills and Concepts in Patient Care,* "Caring for the Patient Undergoing Surgery."

PREOPERATIVE INSTRUCTIONS.—Preoperative instructions are an important part of the total preparation. The exact time that preoperative teaching should be initiated greatly depends upon the individual patient and the type of surgical procedure. Most experts recommend that preoperative instructions be given as close as possible to the time of surgery. Appropriate preoperative instructions given in sufficient detail and at the proper time greatly reduce operative and postoperative complications.

Operative Phase

The operative (or intra-operative) phase begins the moment the patient is taken into the operating room. Two of the major factors to consider at this phase are positioning and anesthesia.

POSITIONING.—The specific surgical procedure will dictate the general position of the patient. For example, the **lithotomy** position is used for a vaginal hysterectomy, while the **dorsal recumbent** position is used for a herniorrhaphy. Regardless of the specific position the patient is placed in, there are some general patient safety guidelines that must be observed. When positioning a patient on the operating table, remember the following:

- Whether the patient is awake or asleep, place the patient in as comfortable a position as possible.
- Strap the patient to the table in a manner that allows for adequate exposure of the operative site and is secure enough to prevent the patient from falling, but that does not cut off circulation or contribute to nerve damage.
- Secure all the patient's extremities in a manner that will prevent them from dangling over the side of the table.
- Pad all bony prominences to prevent the development of pressure areas or nerve damage.
- Make sure the patient is adequately grounded to avoid burns or electrical shock to either the patient or the surgical team.

ANESTHESIA.—One of the greatest contributions to medical science was the introduction of anesthesia. It relieves unnecessary pain and increases the potential and scope of many kinds of surgical procedures. Therefore, healthcare providers must understand the nature of anesthetic agents and their effect on the human body.

Anesthesia may be defined as a loss of sensation that makes a person insensible to pain, with or without loss of consciousness. Some specific anesthetic agents are discussed in the "Pharmacy" chapter of this manual. Healthcare providers must understand the basics of anesthesiology as well as a specific drug's usage.

The two major classifications of anesthesia are regional and general.

Regional Anesthesia.—Regional anesthetics reduce all painful sensations in a particular area of the body without causing unconsciousness. The following is a listing of the various methods and a brief description of each.

- **Topical** anesthesia is administered topically to desensitize a small area of the body for a very short period.
- **Local blocks** consist of the subcutaneous infiltration of a small area of the body with a desensitizing agent. Local anesthesia generally lasts a little longer than topical.
- **Nerve blocks** consist of injecting the agent into the region of a nerve trunk or other large nerve branches. This form of anesthesia blocks all impulses to and from the injected nerves.
- **Spinal** anesthesia consists of injecting the agent into the subarachnoid space of the spinal canal between the third and fourth lumbar space or between the fifth lumbar and first sacral space of the spinal column. This form of anesthesia blocks all impulses to and from the entire area below the point of insertion, provided the patient's position is not changed following injection of the agent. If the patient's position is changed, for example, from dorsal recumbent to Trendelenburg's, the anesthetic agent will move up the spinal column and the level of the anesthesia will also move up. Because of this reaction, care must be exercised in positioning the patient's head and chest above the level of insertion to prevent paralysis (by anesthesia) of the respiratory muscles. In general, spinal anesthesia is considered the safest for most routine major surgery.
- **Epidural blocks** consist of injecting the agent into the epidural space of the spinal canal at any level of the spinal column. The area of anesthesia obtained is similar to that of the subarachnoid spinal method. The epidural method is frequently used when continuous anesthesia is desired for a prolonged period. In these cases, a catheter is inserted into the epidural space through a spinal needle. The needle is removed, but the catheter is left in place. This provides for continuous access to the epidural space.
- **Saddle blocks** consist of injecting the agent into the dural sac at the third and fourth lumbar space. This form of anesthesia blocks all impulses to and from the perineal area of the body.
- **Caudal blocks** consist of injecting the agent into the sacral canal. With this method, anesthesia is obtained from the umbilicus to the toes.

General Anesthesia.—General anesthetics cause total loss of sensation and complete loss of consciousness in the patient. They are administered by inhalation of certain gases or vaporized liquids, intravenous infusion, or rectal induction. The induction of inhalation anesthesia is divided into four stages. These stages and the body's main physiological reaction in each phase are explained below and depicted in figure 2–1.

- **Stage 1** is called the stage of analgesia or induction. During this period, the patient experiences dizziness, a sense of unreality, and a lessening sensitivity to touch and pain. At this stage, the patient's sense of hearing is increased, and responses to noises are intensified (fig. 2-1).
- **Stage 2** is the stage of excitement. During this period, there is a variety of reactions involving muscular activity and delirium. At this stage, the vital signs show evidence of physiological stimulation. It is important to remember that during this stage the patient may respond violently to very little stimulation (fig. 2–1).
- **Stage 3** is called the surgical or operative stage. There are four levels of consciousness (also called planes) to this stage. It is the responsibility of the anesthetist or anesthesiologist to determine which plane is optimal for the procedure. The determination is made according to specific tissue sensitivity of

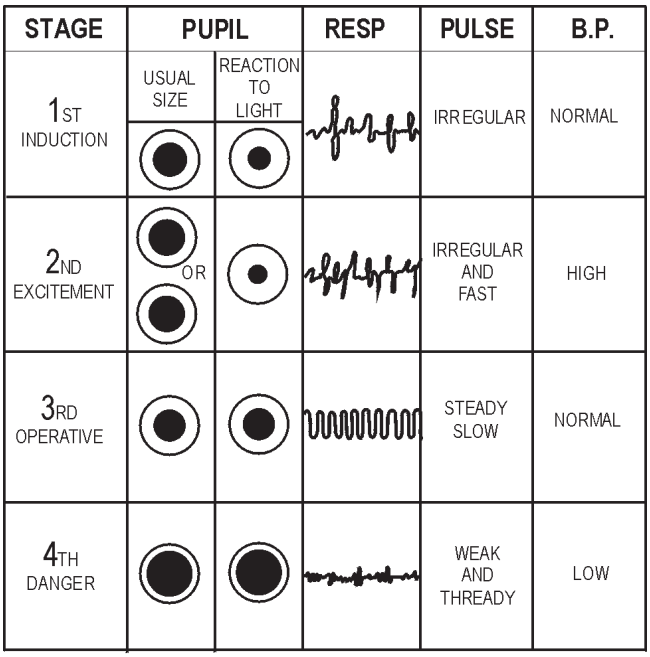

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Figure 2–1.—Stages of anesthesia.

the individual and the surgical site. Each successive plane is achieved by increasing the concentration of the anesthetic agent in the tissue (fig. 2–1).

- **Stage 4** is called the toxic or danger stage. Obviously, this is never a desired stage of anesthesia. At this point, cardiopulmonary failure and death can occur. Once surgical anesthesia has been obtained, the healthcare provider must exercise care to control the level of anesthesia. The fourth level of consciousness of stage 3 is demonstrated by cardiovascular impairment that results from diaphragmatic paralysis. If this plane is not corrected immediately, stage 4 quickly ensues (fig. 2–1).

Recovery Stage

For purposes of this discussion, the recovery phase consists of the period that begins at the completion of the operation and extends until the patient has recovered from anesthesia. The recovery phase generally takes place in a specialized area called the recovery room. This unit is usually located near the operating room and has access to the following:

- Surgeons and anesthesiologists or anesthetists
- Nurses and Hospital Corps personnel who are specially prepared to care for immediate postoperative patients
- Special equipment, supplies, medication, and replacement fluids

From the time of admission to patient discharge, routine care in the recovery room consists of the following:

- Measuring temperature and vital signs (taken immediately upon admission and as ordered by the physician thereafter)
- Maintaining airway patency

  —Patients having an artificial airway in place will automatically expel it as they regain consciousness.

  —Have a mechanical suction apparatus available to remove excess excretions from the patient's airway.
- Ensuring the integrity of dressings, tubes, catheters and casts

  —Locate the presence of any of the above.

  —Make notations regarding all drainage, including color, type, and amount.

  —Immediately report the presence of copious amounts of drainage to a nurse or physician.
- Monitoring intravenous therapy (including blood and blood components)

  —Make notations including type of infusion, rate of flow, and condition of the infusion site.

  —Observe patients receiving blood or blood components closely for untoward reactions.
- Monitoring skin color changes

  —Check dressings and casts frequently to ensure they are not interfering with normal blood circulation to the area.

  —Notify a physician or nurse of general skin color changes that may indicate airway obstruction, hemorrhage, or shock.
- Assessing level of responsiveness

  —For general anesthetics, check for orientation to the environment each time vital signs are taken.

  —For regular anesthetics, check for return of sensory perception and voluntary movement each time vital signs are taken.
- Observing for side effects of the anesthetic agent

  —Each agent has the potential for causing specific side effects. Some common major side effects that may occur following the administration of both spinal and general anesthesia consist of the following:

  - Hypotension/shock
  - Respiratory paralysis
  - Neurological complications
  - Headache
  - Cardiac arrest
  - Respiratory depression
  - Bronchospasm/laryngospasm
  - Diminished circulation
  - Vomiting/aspiration

Postoperative Phase

After the patient's condition has been stabilized in the recovery room, a physician will order the patient's transfer to another area of the facility. Generally, this transfer is to the unit that the patient was assigned to preoperatively. Since both surgery and anesthesia have unavoidable temporary ill effects on normal physiological functions, every effort must be made to prevent postoperative complications.

POSTOPERATIVE GOALS.—From the time the patient is admitted to the recovery room to the time recovery from the operation is complete, there are definite goals of care that guide the entire postoperative course. These goals are as follows:

- Promoting respiratory function
- Promoting cardiovascular function
- Promoting renal function
- Promoting nutrition and elimination
- Promoting fluid and electrolyte balance
- Promoting wound healing
- Encouraging rest and comfort
- Encouraging movement and ambulation
- Preventing postoperative complications

The physician will write orders for postoperative care that are directed at accomplishing the above goals. Although the orders will be based on each individual patient's needs, there will be some common orders that apply to all patients. These orders will center around the promotion of certain physiological functions and areas addressed in the following paragraphs.

Respiratory function is promoted by encouraging frequent coughing and deep breathing. Early movement and ambulation also help improve respiratory function. For some patients, oxygen therapy may also be ordered to assist respiratory function. **Cardiovascular function** is assisted by frequent position changes, early movement and ambulation, and, in some cases, intravenous therapy. **Renal function** is promoted by adequate fluid intake and early movement and ambulation. **Nutritional status** is promoted by ensuring adequate oral and correct intravenous intake and by maintaining accurate intake and output records. **Elimination functions** are promoted by adequate diet and fluid intake. Postoperative patients should be advanced to a normal dietary regimen as soon as possible, since this, too, promotes elimination functions. Early movement and ambulation also help to restore normal elimination activities.

In addition to various medications and dressing change procedures ordered by the physician, **wound healing** is promoted by good nutritional intake and by early movement and ambulation. **Rest and comfort** are supported by properly positioning the patient, providing a restful environment, encouraging good basic hygiene measures, ensuring optimal bladder and bowel output, and promptly administering pain-relieving medications. Early **movement and ambulation** are assisted by ensuring maximum comfort for the patient and providing the encouragement and support for ambulating the patient, particularly in the early postoperative period. As indicated in the above discussion, the value of early movement and ambulation, when permissible, cannot be overemphasized.

POSTOPERATIVE COMPLICATIONS.—During the early postoperative phase, the major complications to be guarded against are respiratory obstruction, shock, and hemorrhage. As the patient progresses in the postoperative period, other complications to avoid are the development of pneumonia, phlebitis and subsequent thrombophlebitis, gastrointestinal problems ranging from abdominal distention to intestinal obstruction, and, finally, wound infections. Accurate implementation of the physician's orders and careful observation, reporting, and recording of the patient's condition will contribute markedly to an optimal and timely postoperative recovery course for the patient.

THE ORTHOPEDIC PATIENT

LEARNING OBJECTIVE: *Evaluate the needs of the orthopedic patient.*

Patients receiving orthopedic services are those who require treatment for fractures, deformities, and diseases or injuries of some part of the musculoskeletal system. Some patients will require surgery, immobilization, or both to correct their condition.

General Care

The basic principles and concepts of care for the surgical patient will apply to orthopedic patients. The majority of patients not requiring surgical intervention

will be managed by bed rest, immobilization, and rehabilitation. Many of the basic concepts of care of the medical patient are applicable for orthopedic patient care. In the military, the usual orthopedic patient is fairly young and in good general physical condition. For these patients, bed rest is prescribed only because other kinds of activity are limited by their condition on admission.

Immobilization

Rehabilitation is the ultimate goal when planning the orthopedic patient's total management. Whether the patient requires surgical or conservative treatment, immobilization is often a part of the overall therapy. Immobilization may consist of applying casts or traction, or using equipment (such as orthopedic frames). During the immobilization phase, simple basic patient care is extremely important. Such things as skin care, active-passive exercises, position changes in bed (as permitted), good nutrition, adequate fluid intake, regularity in elimination, and basic hygiene contribute to both the patient's physical and psychological well-being.

Lengthy periods of immobilization are emotionally stressful for patients, particularly those who are essentially healthy except for the limitations imposed by their condition. Prolonged inactivity contributes to boredom that is frequently manifested by various kinds of acting-out behavior.

Often, the orthopedic patient experiences exaggerated levels of pain. Orthopedic pain is commonly described as sore and aching. Because this condition requires long periods of treatment and hospitalization, the wise management of pain is an important aspect of care. Constant pain, regardless of severity, is energy consuming. You should make every effort to assist the patient in conserving this energy. There are times when the patient's pain can and should be relieved by medications. There are, however, numerous occasions when effective pain relief can be provided by basic patient-care measures such as proper body alignment, change of position, use of heat or cold (if permitted by a physician's orders), back rubs and massages, and even simple conversation with the patient. Meaningful activity also has been found to help relieve pain. Whenever possible, a well-planned physical/occupational therapy regimen should be an integral part of the total rehabilitation plan.

CAST FABRICATION.—As mentioned previously, immobilization is often a part of the overall therapy of the orthopedic patient, and casting is the most common and well-known form of long-term immobilization. In some instances, a Corpsman may be required to assist in applying a cast or be directed to apply or change a cast. In this section, we will discuss the method of applying a short and long arm cast, and a short leg cast.

In applying any cast, the basic materials are the same: webril or cotton bunting, plaster of Paris, a bucket or basin of tepid water, a water source (tap water), protective linen, gloves, a working surface, a cast saw, and seating surfaces for the patient and the Corpsman. Some specific types of casts may require additional material.

SHORT ARM CAST.—A short arm cast extends from the metacarpal-phalangeal joints of the hand to just below the elbow joint. Depending on the location and type of fracture, the physician may order a specific position for the arm to be casted. Generally, the wrist is in a neutral (straight) position, with the fingers slightly flexed in the position of function.

Beginning at the wrist, apply three layers of webril (fig. 2–2A). Then apply webril to the forearm and the hand, making sure that each layer overlaps the other by a third (as shown in figure 2–2B). Check for lumps or wrinkles and correct any by tearing the webril and smoothing it.

Dip the plaster of Paris into the water for approximately 5 seconds. Gently squeeze to remove excess water, but do not wring out. Beginning at the wrist (fig. 2–2C) wrap the plaster in a spiral motion, overlapping each layer by one-third to one-half. Smooth out the layers with a gentle palmar motion. When applying the plaster, make tucks by grasping the excess material and folding it under as if making a pleat. Successive layers cover and smooth over this fold. When the plaster is anchored on the wrist, cover the hand and the palmar surface before continuing up the arm (figs. 2–2D and 2–2E). Repeat this procedure until the cast is thick enough to provide adequate support, generally 4 to 5 layers. The final step is to remove any rough edges and smooth the cast surface (fig. 2–2F). Turn the ends of the cast back and cover with the final layer of plaster, and allow the plaster to set for approximately 15 minutes. Trim with a cast saw, as needed.

LONG ARM CAST.—The procedure for a long arm cast is basically the same as for a short arm cast, except the elbow is maintained in a 90° position, the

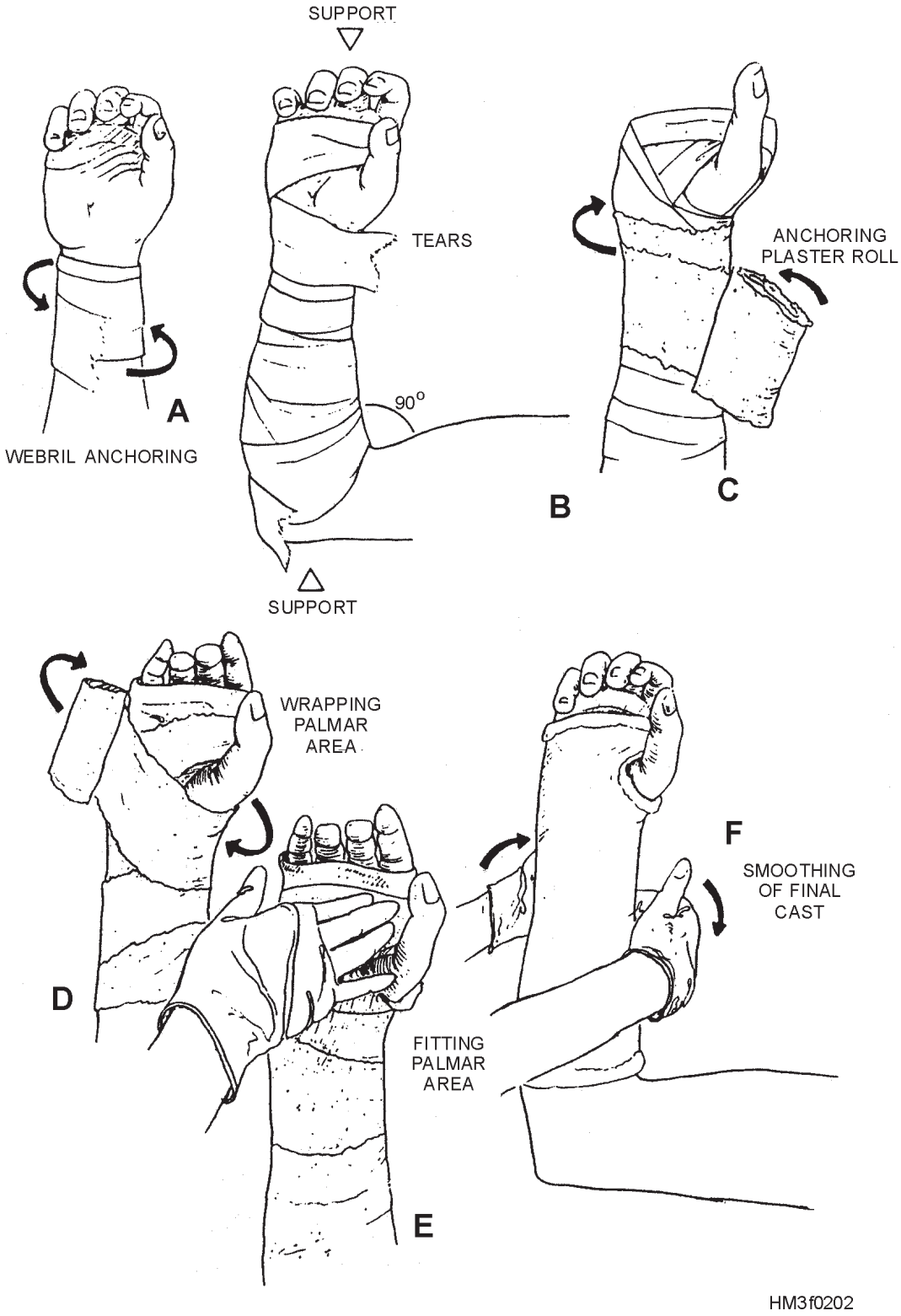

Figure 2–2.—Applying a short arm cast.

cast begins at the wrist and ends on the upper arm below the axilla, and the hand is not wrapped.

SHORT LEG CAST.—In applying a short leg cast, seat the patient on a table with both legs over the side, flexed at the knee. Instruct the patient to hold the affected leg, with the ankle in a neutral position (90°). Make sure that the foot is not rotated medially or laterally. Beginning at the toes, apply webril (figs. 2–3A, 2–3B, and 2–3C) in the same manner as for the short arm cast, ensuring that there are no lumps or

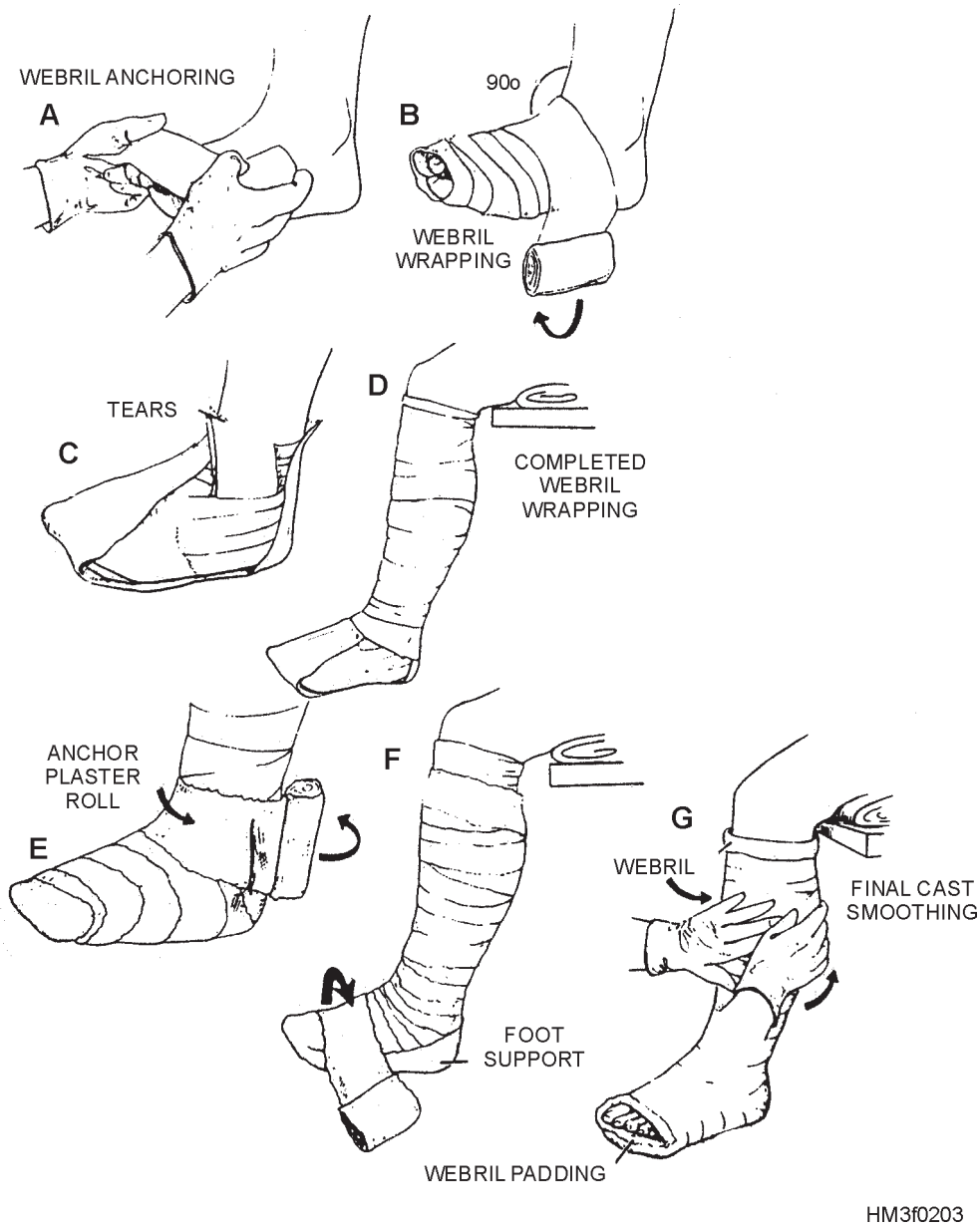

Figure 2–3.—Applying a short leg cast.

wrinkles. Apply the plaster beginning at the toes (fig. 2–3E), using the same technique of tucks and folds and smoothing as for the short arm cast. Before applying the last layer, expose the toes and fold back the webril. As the final step, apply a footplate to the plantar surface of the cast, using a generous thickness of plaster splints secured with one or two rolls of plaster (fig. 2–3F). This area provides support to the cast and a weight-bearing surface when used with a walking boot.

Whenever a cast is applied, you must give the patient written and verbal instruction for cast care and circulation checks (i.e., numbness, cyanosis, tingling of extremities). Instruct the patient to return immediately should any of these conditions occur. When a leg cast is applied, the patient must also receive instructions in the proper use of crutches. The cast will take 24 to 48 hours to completely dry, and it must be treated gently during this time. Since plaster is water-soluble, the cast must be protected with a waterproof covering when bathing or during wet weather. Nothing must be inserted down the cast (e.g., coat hangers) since this action can cause bunching of the padding and result in pressure sores. If swelling occurs, the cast may be split and wrapped with an elastic wrap to alleviate pressure.

Cast Removal

A cast can be removed in two ways: by soaking in warm vinegar-water solution until it dissolves, or by

cutting. To remove by cutting, cast cutters, spreaders, and bandage scissors are necessary. Cuts are made laterally and medially along the long axis of the cast, then widened with the use of spreaders. The padding is then cut with the scissors.

THE TERMINALLY ILL PATIENT

LEARNING OBJECTIVE: *Evaluate the needs of the terminally ill patient.*

The terminally ill patient has many needs that are basically the same as those of other patients: spiritual, psychological, cultural, economic, and physical. What differs in these patients may be best expressed as the urgency to resolve the majority of these needs within a limited time frame. Death comes to everyone in different ways and at different times. For some patients, death is sudden following an acute illness. For others, death follows a lengthy illness. Death not only affects the individual patient; it also affects family and friends, staff, and even other patients. Because of this, it is essential that all healthcare providers understand the process of dying and its possible effects on people.

Individual's Perspective on Death

People view death from their individual and cultural value perspectives. Many people find the courage and strength to face death through their religious beliefs. These patients and their families often seek support from representatives of their religious faith. In many cases, patients who previously could not identify with a religious belief or the concept of a Supreme Being may indicate (verbally or nonverbally) a desire to speak with a spiritual representative. There will also be patients who, through the whole dying experience, will neither desire nor need spiritual support and assistance. In all these cases, it is the responsibility of the healthcare provider to be attentive and perceptive to the patient's needs and to provide whatever support personnel the patient may require.

Cultural Influences

An individual's cultural system influences behavior patterns. When we speak of cultural systems, we refer to certain norms, values, and action patterns of specific groups of people to various aspects of life. Dying is an aspect of life, and it is often referred to as the final crisis of living. In all of our actions, culturally approved roles frequently encourage specific behavior responses. For example, in the Caucasian, Anglo-European culture, a dying patient is expected to show peaceful acceptance of the prognosis; the bereaved is expected to communicate grief. When people behave differently, the healthcare provider frequently has difficulty responding appropriately.

Five Stages of Death

A theory of death and dying has developed that provides highly meaningful knowledge and skills to all persons involved with the experience. In this theory of death and dying (as formulated by Dr. Elizabeth Kubler-Ross in her book *On Death and Dying*), it is suggested that most people (both patients and significant others) go through five stages: **denial**, **anger**, **bargaining**, **depression**, and **acceptance**.

The first stage, **denial**, is one of nonacceptance. "No, it can't be me! There must be a mistake!" It is not only important for the healthcare provider to recognize the denial stage with its behavior responses, but also to realize that some people maintain denial up to the point of impending death. The next stage is **anger**. This is a period of hostility and questioning: "Why me?" The third stage is **bargaining**. At this point, people revert to a culturally reinforced concept that good behavior is rewarded. Patients are often heard stating, "I'd do anything if I could just turn this thing around." Once patients realize that bargaining is futile, they quickly enter into the stage of **depression**. In addition to grieving because of their personal loss, it is at this point that patients become concerned about their family and "putting affairs in order." The final stage comes when the patient finally **accepts** death and is prepared for it. It is usually at this time that the patient's family requires more support than the patient. It is important to remember that one or more stages may be skipped, and that the last stage may never be reached.

Support for the Dying

Despite the fact that we all realize our mortality, there is no easy way to discuss death. To the strong and healthy, death is a frightening thought. The fact that sooner or later everyone dies does not make death easier. There are no procedure books that tell healthcare providers "how to do" death. The "how to" will only come from the individual healthcare provider who understands that patients are people, and that, more than any other time in life, the dying patient needs to be treated as an individual person.

An element of uncertainty and helplessness is almost always present when death occurs. Assessment and respect for the patient's individual and cultural value system are of key importance in planning the care of the dying. As healthcare personnel, we often approach a dying patient with some feelings of uncertainty, helplessness, and anxiety. We feel helpless in being unable to perform tasks that will keep the patient alive, uncertain that we are doing all that we can do to either make the patient as comfortable as possible or to postpone or prevent death altogether. We feel anxious about how to communicate effectively with patients, their family, or even among ourselves. This is a normal response since any discussion about death carries a high emotional risk for the patient as well as the healthcare provider. Nevertheless, communicating can provide both strength and comfort to all if done with sensitivity and dignity, and it is sensitivity and dignity that is the essence of all healthcare services.

PATIENT SAFETY

LEARNING OBJECTIVE: *Identify patient safety concerns in a medical treatment facility.*

The primary goal of the healthcare provider is maintaining, sustaining, restoring, and rehabilitating a physical or psychological function of the patient. To achieve this goal, healthcare facilities and providers are charged with developing policies and implementing mechanisms that ensure safe, efficient, and therapeutically effective care. The theme of this discussion is safety and will address the major aspects of both environmental and personal safety.

ENVIRONMENTAL SAFETY

For purposes of this discussion, the environment is defined as the physical surroundings of the patient and includes such things as lighting, equipment, supplies, chemicals, architectural structure, and the activities of both patient and staff personnel. Maintaining safety becomes even more difficult when working with people who are ill or anxious and who cannot exercise their usual control over their environment. Loss of strength, decreased sensory input, and disability often accompany illness. Because of this, you must be constantly alert and responsive to maintaining a safe environment.

Both JCAHO and the National Safety Council of the American Hospital Association (AHA) have identified four major types of accidents that continually occur to patients. These hazards consist of falls, electrical shocks, physical and chemical burns, and fire and explosions.

Patient Fall Precautions

The most basic of hospital equipment, the patient's bed, is a common cause of falls. Falls occur among oriented patients getting in and out of bed at night in situations where there is inadequate lighting. Falls occur among disoriented or confused bed patients when bedrails are not used or are used improperly. Slippery or cluttered floors contribute to patient, staff, and even visitor falls. Patients with physical limitations or patients being treated with sensory-altering medications fall when attempting to ambulate without proper assistance. Falls result from running in passageways, carelessness when going around blind corners, and collisions between personnel and equipment. Unattended and improperly secured patients fall from gurneys and wheelchairs.

Healthcare personnel can do much to prevent the incidence of falls by following some simple procedures. These preventive measures include properly using side rails on beds, gurneys, and cribs; locking the wheels of gurneys and wheelchairs when transferring patients; and not leaving patients unattended. Safety straps must also be used to secure patients on gurneys or in wheelchairs. Maintaining dry and uncluttered floors markedly reduces the number of accidental falls. Patients with physical or sensory deficiencies should always be assisted during ambulation. Patients using crutches, canes, or walkers must receive adequate instructions in the proper use of these aids before being permitted to ambulate independently. The total care environment must be equipped with adequate night lights to assist orientation and to prevent falls resulting from an inability to see.

Electrical Safety Precautions

The expanded variety, quantity, and complexity of electrical and electronic equipment used for diagnostic and therapeutic care has markedly increased the hazards of burns, shock, explosions, and fire. It is imperative that healthcare providers at all levels be alert to such hazards and maintain an electrically safe environment. Knowledge and adherence to the

following guidelines will contribute significantly to providing an electrically safe environment for all personnel, whether they be patients, staff, or visitors.

- Do not use electrical equipment with damaged plugs or cords.
- Do not attempt to repair defective equipment.
- Do not use electrical equipment unless it is properly grounded with a three-wire cord and three-prong plug.
- Do not use extension cords or plug adapters unless approved by the Medical Repair Department or the safety officer.
- Do not create a trip hazard by passing electrical cords across doorways or walkways.
- Do not remove a plug from the receptacle by gripping the cord.
- Do not allow the use of personal electrical appliances without the approval of the safety officer.
- Do not put water on an electrical fire.
- Do not work with electrical equipment with wet hands or feet.
- Have newly purchased electronic medical equipment tested for electrical safety by Medical Repair before putting it into service.
- Operate all electrical and electronic equipment according to manufacturer's instructions.
- Remove from service electrical equipment that sparks, smokes, or gives a slight shock. Tag defective equipment and expedite repair.
- Be aware that patients with intravenous therapy and electronic monitoring equipment are at high risk from electrical shocks.
- Call Medical Repair when equipment is not functioning properly or Public Works if there is difficulty with the power distribution system.

Since accidents resulting in physical and chemical burns have initiated numerous consumer claims of healthcare provider and facility malpractice, all healthcare personnel must be thoroughly indoctrinated in the proper use of equipment, supplies, and chemicals.

Physical and Chemical Burn Precautions

The following discussion will address common causes and precautions to be taken to eliminate the occurrence of burn injuries.

HOT WATER BOTTLES.—A common cause of burns—particularly in the elderly, diabetics, and patients with circulatory impairments—is the hot water bottle. When you are filling the bottle, the water temperature must never exceed 125°F (51°C). Test the bottle for leaks and cover it so that there is a protective layer of cloth between the patient and the bottle itself.

HEATING PADS.—Heating pads present a dual hazard of potential burns and electrical shock. The precautions that should be taken when using heating pads are the same ones that should be used for hot water bottles: temperature control and protective cloth padding. Precautions you should observe to avoid shock include properly maintaining the equipment; conducting preuse inspections; testing the equipment for wiring and plug defects; and ensuring periodic safety inspections are conducted by Medical Repair personnel.

ICE BAGS OR COLD PACKS.—Like hot water bottles, ice bags and cold packs (packaged chemical coolant) can cause skin-contact burns. This kind of burn is commonly referred to as local frostbite. The precautions taken for applying ice bags and cold baths are the same as those for hot water bottles with regard to attention to elderly, diabetic, and patients with circulatory impairments.

HYPOTHERMIA BLANKETS.—Like ice bags, hypothermia blankets can also cause contact burns. When using hypothermia blankets, check the patient's skin frequently for signs of marked discoloration (indicating indirect localized tissue damage). Ensure that the bare blanket does not come in direct contact with the patient's unprotected skin. This precaution is easily accomplished by using sheets or cotton blankets between the patient and the hypothermia blanket itself. When using this form of therapy, follow both the physician's orders and the manufacturer's instructions in managing the temperature control of the equipment.

HEAT (BED) CRADLE.—When using the heat (bed) cradle, protect the patient from burns resulting from overexposure or placement of the equipment too close to the area of the patient being treated. As with heating pads, heat cradles present the dual hazard of

potential burns and electrical shock. Another hazard to keep in mind is that of fire. Ensure that the bedding and the heat source do not come in direct contact and cause the bedding to ignite. Occasionally, heat lamps are used to accomplish the same results as a heat cradle. Do not use towels, pillow cases, or linen of any kind to drape over heat lamps. In fact, no lamps of any kind should be draped with any kind of material, regardless of the purpose of the draping.

STEAM VAPORIZERS AND HOT FOODS AND LIQUIDS.—Steam vaporizers and hot foods and liquids are common causes of patient burns. When using steam vaporizers, ensure that the vapor of steam does not flow directly on the patient as a result of the initial positioning of the equipment or by accidental movement or bumping. Patients sensitive to hot foods and liquids are more likely burned. Also, because of lack of coordination, weakness, or medication, patients may be less able to handle hot foods and liquids safely without spilling them.

In the direct patient care units as well as in diagnostic and treatment areas, there is unlimited potential for inflicting burns on patients. When the modern electrical and electronic equipment and the potent chemicals used for diagnosis and treatment are used properly, they contribute to the patient's recovery and rehabilitation. When they are used carelessly or improperly, these same sources may cause patients additional pain and discomfort, serious illness, and, in some cases, death.

Fire and Explosion Precautions

Often when we speak of safety measures, one of our first thoughts is of a fire or an explosion involving the loss of life or injury to a number of people. Good housekeeping, maintenance, and discipline help prevent such mishaps. Remember that buildings constructed of fire-resistant materials may not be fireproof, and they are certainly not explosion proof. Good maintenance includes checking, reporting, and ensuring correct repair of electrical equipment, and routine checking of fire fighting equipment by qualified personnel. The education and training of personnel are the most effective means of preventing fires. Used in the context of fire safety measures, good discipline means developing a fire plan to use as outlined in a fire bill, having periodic fire drills, and enforcing no-smoking regulations.

FIRE EVACUATION PROCEDURES.—Staff members should be familiar with the fire regulations at their duty station and know what to do in case of fire. Staff should know how to report a fire, use a fire extinguisher, and evacuate patients. When a fire occurs, there are certain basic rules to follow: The senior person should take charge and appoint someone to notify the fire department and the officer of the day of the exact location of the fire. Everyone should remain calm. All oxygen equipment and electrical appliances must be turned off unless such equipment is necessary to sustain life. All windows and doors should be closed and all possible exits cleared. When necessary and directed by proper authority, patients should be removed in a calm and orderly fashion and mustered outside.

SMOKING REGULATIONS.—By regulation (BUMEDINST 6200.12, *Tobacco Use in Navy Medical Department Activities*), smoking is no longer permitted in Navy hospitals. To ensure general safety and awareness of this prohibition, inform patients, visitors, and staff of the facility's no-smoking status by prominently displaying "No Smoking" signs throughout the hospital—especially in rooms and areas where oxygen and flammable agents are used and stored.

Safety Precautions in the Operating Room

Since safety practices are important to emphasize, this section will cover some of the situations that are potentially hazardous in the operating room and discuss what might be done to eliminate the hazard.

All personnel should know the location of all emergency medications and equipment in the operating room. This includes drugs, cardiac arrest equipment, and resuscitators. All electrical equipment and plugs must be of the explosion-proof type and bear a label stating such. There should be written schedules of inspections and maintenance of all electrical equipment. Navy regulations prohibit the use of explosive anesthetics in the operating room. These regulations, however, do not mean we can lessen our concern for fire and explosion hazards. The surface of all floors in the operating room must provide a path of electrical conductivity between all persons and equipment making contact with the floor to prevent the accumulation of dangerous electrostatic charges. All furniture and equipment should be constructed of metal or of other electrically conductive material and should be equipped with conductive leg tips, casters, or equivalent devices. Periodic inspections should be made of leg tips, tires, casters, or other conductive

devices of furniture and equipment. These inspections will ensure that they are maintained free of wax, lint, or other foreign material that may insulate them and defeat the purpose for which they are used. Excess lubrication of casters should be avoided to prevent accumulation of oil on conductive wheels. Dry graphite and graphite oil are the preferred lubricants.

Rubber accessories for anesthesia machines should be of the conductive type, plainly labeled as such, and routinely tested to ensure that conductivity is maintained. It is essential that all replacement items be of conductive material.

All personnel entering the operating room should be in electrical contact with the conductive floor by wearing conductive footwear or an alternative method of providing a path of conductivity. Conductive footwear and other personnel-to-floor conductive equipment should be tested on a regularly scheduled basis.

All apparel worn in the operating room should be made of a nonstatic-producing material. Fabrics of 100 percent cotton are the most acceptable. Fabrics made of synthetic blends may be used only if they have been treated by the manufacturer for use in the operating room. Wool blankets and apparel made of untreated synthetic fabrics are not permitted in the operating room.

Operating rooms must have adequate air-conditioning equipment to maintain relative humidity and temperature within a constant range. The relative humidity should be kept at 55 to 60 percent. This level will reduce the possibility of electrostatic discharge and possible explosion of combustible gases. The temperature should be chosen on the basis of the well-being of the patient. The recommended temperature is between 65° and 74°F. The control of bacteria carried on dust particles is facilitated when the recommended humidity and temperature are maintained.

All oxygen cylinders in use or in storage will be tagged with DD Form 1191, Warning Tag for Medical Oxygen Equipment, and measures will be taken to ensure compliance with instructions 1 through 7 printed on the form. An additional tag is required on all cylinders to indicate "EMPTY," "IN USE," or "FULL." Safety precautions should be conspicuously posted in all areas in which oxygen cylinders are stored and in which oxygen therapy is being administered. This posting should be made so it will immediately make all personnel aware of the precautionary measures required in the area.

All electrical service equipment, switchboards, or panelboards should be installed in a nonhazardous location. Devices or apparatus that tend to create an arc, sparks, or high temperatures must not be installed in hazardous locations unless these devices are in compliance with the National Electrical Code. Lamps in a fixed position will be enclosed and will be properly protected by substantial metal guards or other means where exposed to breakage. Cords for portable lamps or portable electrical appliances must be continuous and without switches from the appliance to the attachment plug. Such cords must contain an insulated conductor to form a grounding connection between the electrical outlet and the appliance.

GENERAL SAFETY

In addition to the specifics presented earlier, some other basic principles are relevant to patient safety. They are:

- Ensure your patients are familiar with their environment, thus making it less hazardous to them. This familiarization can be accomplished in many ways, such as by showing your patients the floor plan of the ward they have been admitted to and by indicating key areas (lounge, bathrooms, nursing station, etc.) that may be of interest to them.

- Be aware of patient sensory impairment and incorporate precautionary procedures into their patient-care plan. For example, this principle can be applied to patients who have been given a pain medication, such as morphine or Demerol®. Medications such as these dull body senses. If a patient in this condition wishes to walk around, precautionary actions dictate that you either be close at hand to prevent the patient from accidental falls or that you do not permit the patient to ambulate until the effects of the medication have stopped.

- Understand that all diagnostic and therapeutic measures have the potential to cause a patient harm.

- Ensure that all accidents and incidents are documented and analyzed to identify and correct high-risk safety hazards.

ENVIRONMENTAL HYGIENE

LEARNING OBJECTIVE: *Identify environmental hygiene concerns in a medical treatment facility.*

Today's public is very much aware of the environment and its effect on the health and comfort of human beings. The healthcare setting is a unique environment and has a distinct character of its own. You need to be aware of that character and ensure that the environment will support the optimum in health maintenance, care, and rehabilitation.

In the context of the environment, hygiene may best be described as practices that provide a healthy environment. Basically, environmental hygiene practices include the following three areas of concern: safety (which has already been addressed); environmental comfort and stimuli; and, finally, infection control (which will be discussed briefly here, but in greater detail later in this chapter under "Medical Asepsis"). You have certain responsibilities for helping to control the facility's general environment as well as the patient's immediate surroundings.

CONCURRENT AND TERMINAL CLEANING

Maintaining cleanliness is a major responsibility of all members of the healthcare team, regardless of their position on the team. Cleanliness not only provides for patient comfort and a positive stimulus, it also impacts on infection control. The Hospital Corpsman is often directly responsible for the maintenance of patient care areas. The management of cleanliness in patient care areas is conducted concurrently and terminally. **Concurrent cleaning** is the disinfection and sterilization of patient supplies and equipment during hospitalization. **Terminal cleaning** is the disinfection and sterilization of patient supplies and equipment after the patient is discharged from the unit or hospital. Both concurrent and terminal cleaning are extremely important procedures that not only aid the patient's comfort and psychological outlook, but also contribute to both efficient physical care and control of the complications of illness and injury.

AESTHETICS

Aesthetically, an uncluttered look is far more appealing to the eye than an untidy one. Other environmental factors,such as color and noise, can also enhance or hinder the progress of a person's physical condition. In the past, almost all healthcare facilities used white as a basic color for walls and bedside equipment. However, research has shown that the use of color is calming and restful to the patient, and, as has been previously stated, rest is a very important healing agent in any kind of illness. Noise control is another environmental element that requires your attention. The large number of people and the amount of equipment traffic in a facility serve to create a high noise level that must be monitored. Add to that the noise of multiple radios and televisions, and it is understandable why noise control is necessary if a healing environment is to be created and maintained.

CLIMATE CONTROL

Another important aspect of environmental hygiene is climate control. Many facilities use air conditioning or similar control systems to maintain proper ventilation, humidity, and temperature control. In facilities without air conditioning, windows should be opened from the top and bottom to provide for cross-ventilation. Ensure that patients are not located in a drafty area. Window sill deflectors or patient screens are often used to redirect drafty airflows. Maintain facility temperatures at recommended energy-conservation levels that are also acceptable as health-promoting temperatures. In addition to maintaining a healthy climate, good ventilation is necessary in controlling and eliminating disagreeable odors. In cases where airflow does not control odors, room fresheners should be discretely used. Offensive, odor-producing articles (such as soiled dressings, used bedpans, and urinals) should be removed to appropriate disposal and disinfecting areas as rapidly as possible. Objectionable odors (such as bad breath or perspiration of patients) are best controlled by proper personal hygiene and clean clothing.

LIGHTING

Natural light is important in the care of the sick. Sunlight usually brightens the area and helps to improve the mental well-being of the patient. However, light can be a source of irritation if it shines directly in the patient's eyes or produces a glare from the furniture, linen, or walls. Adjust shades or blinds

for the patient's comfort. Artificial light should be strong enough to prevent eyestrain and diffuse enough to prevent glare. Whenever possible, provide a bed lamp for the patient. As discussed earlier under "Safety Aspect," a dim light is valuable as a comfort and safety measure at night. This light should be situated so it will not shine in the patient's eyes and yet provide sufficient light along the floor so that all obstructions can be seen. A night light may help orient elderly patients if they are confused as to their surroundings upon awakening.

In conclusion, it is important that you understand the effects of the environment on patients. People are more sensitive to excessive stimuli in the environment when they are ill, and they often become irritable and unable to cooperate in their care because of these excesses. This is particularly apparent in critical care areas (e.g., in CCUs and ICUs) and isolation, terminal, and geriatric units. You must realize and respond to the vital importance of the environment in the total medical management plan of your patients.

PATHOGENIC ORGANISM CONTROL

LEARNING OBJECTIVE: *Recall medical asepsis principles and recognize medical asepsis practices.*

All health care, regardless of who provides it or where it is provided, must be directed toward maintaining, promoting, and restoring health. Because of this goal, all persons seeking assistance in a healthcare facility must be protected from additional injury, disease, or infection. Adherence to good safety principles and practices protects a patient from personal injury. Additionally, attention to personal and environmental hygiene not only protects against further injury, but also constitutes the first step in controlling the presence, growth, and spread of pathogenic organisms. The discussion that follows addresses infection control, particularly in the context of medical and surgical aseptic practices.

MEDICAL ASEPSIS

Medical asepsis is the term used to describe those practices used to prevent the transfer of pathogenic organisms from person to person, place to place, or person to place. Medical aseptic practices are routinely used in direct patient care areas, as well as in other service areas in the healthcare environment, to interrupt a chain of events necessary for the continuation of an infectious process. The components of this chain of events consist of the elements defined below.

Infectious Agent

An infectious agent is an organism that is capable of producing an infection or infectious disease.

Reservoir of Infectious Agents

A reservoir of infectious agents is the carrier on which the infectious agent primarily depends for survival. The agent lives, multiplies, and reproduces so that it can be transferred to a susceptible host. Reservoirs of infectious agents could be man, animal, plants, or soil. Man himself is the most frequent reservoir of infectious agents pathogenic to man.

PORTAL OF EXIT.—The portal of exit is the avenue by which the infectious agent leaves its reservoir. When the reservoir is man, these avenues include various body systems (such as respiratory, intestinal, and genitourinary tracts) and open lesions.

MODE OF TRANSMISSION.—The mode of transmission is the mechanism by which the infectious agent is transmitted from its reservoir to a susceptible being (host). Air, water, food, dust, dirt, insects, inanimate objects, and other persons are examples of modes of transmission.

PORTAL OF ENTRY.—The portal of entry is the avenue by which the infectious agent enters the susceptible host. In man, these portals correspond to the exit route avenues, including the respiratory and gastrointestinal tracts, through a break in the skin, or by direct infection of the mucous membrane.

SUSCEPTIBLE HOST.—The susceptible host is man or another living organism that affords an infectious agent nourishment or protection to survive and multiply.

Removal or control of any one component in the above chain of events will control the infectious process.

Two Basic Medical Asepsis Practices

The two basic medical asepsis practices that are absolutely essential in preventing and controlling the spread of infection and transmittable diseases are

frequent hand washing and proper linen-handling procedures.

HAND WASHING.—The following are some common instances when provider hand washing is imperative:

- Before and after each patient contact
- Before handling food and medications
- After coughing, sneezing, or blowing your nose
- After using the toilet

LINEN HANDLING.—Improper handling of linen results in the transfer of pathogenic organisms through direct contact with the healthcare provider's clothing and subsequent contact with the patient, patient-care items, or other materials in the care environment. Proper linen handling is such an elementary procedure that, in theory, it seems almost unnecessary to mention. However, it is a procedure so frequently ignored that emphasis is justified.

All linen, whether clean or used, must never be held against one's clothing or placed on the floor. The floors of a healthcare facility are considered to be grossly contaminated, and, thus, any article coming in contact with the floor will also be contaminated. Place all dirty linen in appropriate laundry bags. Linen from patients having infectious or communicable diseases must be handled in a special manner.

Isolation Technique

Isolation technique, a medical aseptic practice, inhibits the spread and transfer of pathogenic organisms by limiting the contacts of the patient and creating some kind of physical barrier between the patient and others. Isolation precautions in hospitals must meet the following objectives. They must

- be epidemiologically sound;
- recognize the importance that body fluids, secretions, and excretions may have in the transmission of nosocomial (hospital originating) pathogens;
- contain adequate precautions for infections transmitted by airborne droplets and other routes of transmission; and
- be as simple and as patient friendly as possible.

In isolation techniques, disinfection procedures are employed to control contaminated items and areas. For purposes of this discussion, disinfection is described as the killing of certain infectious (pathogenic) agents outside the body by a physical or chemical means. Isolation techniques employ two kinds of disinfection practices, concurrent and terminal.

CONCURRENT DISINFECTION.— Concurrent disinfection consists of the daily measures taken to control the spread of pathogenic organisms while the patient is still considered infectious.

TERMINAL DISINFECTION.—Terminal disinfection consists of those measures taken to destroy pathogenic organisms remaining after the patient is discharged from isolation. There are a variety of chemical and physical means used to disinfect supplies, equipment, and environmental areas, and each facility will determine its own protocols based on the recommendation of an Infection Control Committee.

SURGICAL ASEPTIC TECHNIQUE

LEARNING OBJECTIVE: *Recall the principles and guidelines for surgical aseptic technique, and determine the correct sterilization process for different types of materials.*

As used in this discussion, surgical aseptic technique is the term used to describe the sterilization, storage, and handling of articles to keep them free of pathogenic organisms. The following discussion will address the preparation and sterilization of surgical equipment and supplies, and the preparation of the operating room for performing a surgical procedure. It should be noted that specific methods of preparation will vary from place to place, but the basic principles of surgical aseptic technique will remain the same. This discussion will present general guidelines, and individual providers are advised to refer to local instructions regarding the particular routines of a specific facility.

Before an operation, it is necessary to sterilize and keep sterile all instruments, materials, and supplies that come in contact with the surgical site. Every item handled by the surgeon and the surgeon's assistants must be sterile. The patient's skin and the hands of the members of the surgical team must be thoroughly scrubbed, prepared, and kept as aseptic as possible.

During the operation, the surgeon, surgeon's assistants, and the scrub corpsman must wear sterile gowns and gloves and must not touch anything that is not sterile. Maintaining sterile technique is a cooperative responsibility of the entire surgical team. Each member must develop a surgical conscience, a willingness to supervise and be supervised by others regarding the adherence to standards. Without this cooperative and vigilant effort, a break in sterile technique may go unnoticed or not be corrected, and an otherwise successful surgical procedure may result in complete failure.

Basic Guidelines

To assist in maintaining the aseptic technique, all members of the surgical team must adhere to the following principles:

- All personnel assigned to the operating room must practice good personal hygiene. This includes daily bathing and clothing change.
- Those personnel having colds, sore throats, open sores, and/or other infections should not be permitted in the operating room.
- Operating room attire (which includes scrub suits, gowns, head coverings, and face masks) should not be worn outside the operating room suite. If such occurs, change all attire before re-entering the clean area. (The operating room and adjacent supporting areas are classified as "clean areas.")
- All members of the surgical team having direct contact with the surgical site must perform the surgical hand scrub before the operation.
- All materials and instruments used in contact with the site must be sterile.
- The gowns worn by surgeons and scrub corpsmen are considered sterile from shoulder to waist (in the front only), including the gown sleeves.
- If sterile surgical gloves are torn, punctured, or have touched an unsterile surface or item, they are considered contaminated.
- The safest, most practical method of sterilization for most articles is steam under pressure.
- Label all prepared, packaged, and sterilized items with an expiration date.
- Use articles packaged and sterilized in cotton muslin wrappers within 28 calendar days.
- Use articles sterilized in cotton muslin wrappers and sealed in plastic within 180 calendar days.
- Unsterile articles must not come in contact with sterile articles.
- Make sure the patient's skin is as clean as possible before a surgical procedure.
- Take every precaution to prevent contamination of sterile areas or supplies by airborne organisms.

Methods of Sterilization

Sterilization refers to the complete destruction of all living organisms, including bacterial spores and viruses. The word "sterile" means free from or the absence of all living organisms. Any item to be sterilized must be thoroughly cleaned mechanically or by hand, using soap or detergent and water. When cleaning by hand, apply friction to the item using a brush. After cleaning, thoroughly rinse the item with clean, running water before sterilization. The appropriate sterilization method is determined according to how the item will be used, the material from which the item is made, and the sterilization methods available. The physical methods of sterilization are moist heat and dry heat. Chemical methods include gas and liquid solutions.

PHYSICAL METHODS.—Steam under pressure (autoclave) is the most dependable and economical method of sterilization. It is the method of choice for metalware, glassware, most rubber goods, and dry goods. All articles must be correctly wrapped or packaged so that the steam will come in contact with all surfaces of the article. Similar items should be sterilized together, especially those requiring the same time and temperature exposure. Articles that will collect water must be placed so that the water will drain out of the article during the sterilization cycle. A sterilizer should be loaded in a manner that will allow the free flow of steam in and around all articles. Each item sterilized must be dated with the expiration of sterility. Sterilization indicators must be used in each load that is put through the sterilization process. This verifies proper steam and temperature penetration.

The operating procedures for a steam sterilizer will vary according to the type and manufacturer. There are a number of manufacturers, but there are only two types of steam-under-pressure sterilizers. They are the

downward displacement and the **prevacuum, high-temperature** autoclaves.

Downward Displacement Autoclave.—In the downward (gravity) displacement autoclave, air in the chamber is forced downward from the top of the chamber. The temperature in the sterilizer gradually increases as the steam heats the chamber and its contents. The actual timing does not begin until the temperature is above 245°F (118°C).

Prevacuum, High-temperature Autoclave.—The prevacuum, high-temperature autoclave is the most modern and economical to operate and requires the least time to sterilize a single load. By use of a vacuum pump, air is extracted from the chamber before admitting steam. This prevacuum process permits instant steam penetration to all articles and through all cotton or linen dry goods. The sterilization time is reduced to 4 minutes. The temperature of the chamber is rapidly raised and held at 274°F (134°C). The cycle is timed automatically.

Sterilizing Times.—If the temperature is increased, the sterilization time may be decreased. The following are some practical sterilization time periods.

- 3 minutes at 270°F (132°C)
- 8 minutes at 257°F (125°C)
- 18 minutes at 245°F (118°C)

All operating rooms are equipped with high-speed (flash) sterilizers. Wrapped, covered, opened instruments placed in perforated trays are "flash" sterilized for 3 minutes at 270°F (132°C). Sterilization timing begins when the above temperature is reached, not before.

Dry-Heat Sterilization.—The use of dry heat as a sterilizing agent has limitations. It should be restricted to items that are unsuitable for exposure to moist heat. High temperatures and extended time periods are required when using dry heat. In most instances, this method often proves impractical. The temperature must be 320°F (160°C), and the time period must be at least 2 hours.

CHEMICAL STERILIZATION.—Only one liquid chemical, if properly used, is capable of rendering an item sterile. That chemical is **glutaraldehyde**. The item to be sterilized must be totally submerged in the glutaraldehyde solution for 10 hours. Before immersion, the item must be thoroughly cleansed and rinsed with sterile water or sterile normal saline. It should be noted that this chemical is extremely caustic to skin, mucous membranes, and other tissues.

The most effective method of gas chemical sterilization presently available is the use of **ethylene oxide (ETO) gas**. ETO gas sterilization should be used only for material and supplies that will not withstand sterilization by steam under pressure. Never gas-sterilize any item that can be steam-sterilized. The concentration of the gas and the temperature and humidity inside the sterilizer are vital factors that affect the gas-sterilization process.

ETO gas-sterilization periods range from 3 to 7 hours. All items gas-sterilized must be allowed an aeration (airing out) period. During this period, the ETO gas is expelled from the surface of the item. It is not practical here to present all exposure times, gas concentrations, and aeration times for various items to be gas-sterilized. When using an ETO gas-sterilizer, you must be extremely cautious and follow the manufacturer's instructions carefully.

Preparation of Supplies for Autoclaving

Comply with the following guidelines in preparing supplies that are to be autoclaved.

- Inspect all articles to be sterilized, making sure they are clean, in good condition, and in working order.
- Wrap instruments and materials in double muslin wrappers or two layers of disposable sterilization wrappers.
- When muslin wrappers are routinely used, launder them after each use, and carefully inspect them for holes and tears before use.
- When articles are placed in glass or metal containers for autoclaving, place the lid of the container so the steam will penetrate the entire inside of the container.
- Arrange the contents of a linen pack in such a way that the articles on top are used first.
- Label every item that is packaged for sterilization to specify the contents and expiration date.
- Do not place surgical knife blades or suture materials inside linen packs or on instrument trays before sterilization.

The following are specific guidelines for sterilizing instruments, glassware, suture materials, and rubber latex materials.

Instruments:

- Wash each instrument after use with an antiseptic detergent solution. When washing by hand, pay particular attention to hinged parts and serrated surfaces. Rinse all instruments, and dry them thoroughly.
- Use an instrument washer/sterilizer, if available, to decontaminate instruments and utensils following each surgical procedure.
- Following cleaning and decontamination, leave hinged instruments unclasped and wrapped singly or placed on trays for resterilization.

Glassware:

- Inspect all reusable glassware for cracks or chips.
- Wash all reusable glassware with soap or detergent and water after use, and rinse it completely.
- When preparing reusable glass syringes

  —match numbers or syringe parts;

  —wrap each plunger and barrel separately in gauze; and

  —wrap each complete syringe in a double muslin wrapper.

- When glassware, tubes, medicine glasses, and beakers are part of a sterile tray, wrap each glass item in gauze before placing it on the tray.

Suture Material: Suture materials are available in two major categories: **absorbable** and **nonabsorbable**. Absorbable suture materials can be digested by the tissues during the healing process. Absorbable sutures are made from collagen (an animal protein derived from healthy animals) or from synthetic polymers. Nonabsorbable suture materials are those that effectively resist the enzymatic digestion process in living tissue. These sutures are made of metal or other inorganic materials. In both types, each strand of specifically sized suture material is uniform in diameter and is predictable in performance.

Modern manufacturing processes make all suture materials available in individual packages, presterilized, with or without a surgical needle attached. Once opened, **do not resterilize** either the individual package or an individual strand of suture material.

> **NOTE:** The only exception to this rule involves the use of surgical stainless steel. This material is often provided in unsterile packages or tubes. Individual strands or entire packages of surgical stainless steel must be sterilized before use.

Rubber Latex Materials:

- Wash rubber tubing in an antiseptic detergent solution.

  —Pay attention to the inside of the tubing. Rinse all tubing well and place it flat or loosely coiled in a wrapper or container.

  —When packing latex surgical drains for sterilization, place a piece of gauze in the lumen of the tray. **Never resterilize surgical drains.**

  —**Never resterilize rubber catheters bearing a disposable label.**

  —**Never resterilize surgeon's disposable (rubber) gloves.** These gloves are for one-time use only.

Handling Sterile Articles

LEARNING OBJECTIVE: *Recall sterile article handling and surgical hand scrubbing techniques, donning procedure for gowning and gloving, and the steps to clean an operating/treatment room.*

When you are changing a dressing, removing sutures, or preparing the patient for a surgical procedure, it will be necessary to establish a sterile field from which to work. The field should be established on a stable, clean, flat, dry surface. Wrappers from sterile articles may be used as a sterile field as long as the inside of the wrapper remains sterile. If the size of the wrapper does not provide a sufficient working space for the sterile field, use a sterile towel. Once established, only those persons who have donned sterile gloves should touch the sterile

field. Additionally, the following basic rules must be adhered to:

- An article is either sterile or unsterile; there is no in-between. If there is doubt about the sterility of an item, consider it unsterile.
- Any time the sterility of a field has been compromised, replace the contaminated field and setup.
- Do not open sterile articles until they are ready for use.
- Do not leave sterile articles unattended once they are opened and placed on a sterile field.
- Do not return sterile articles to a container once they have been removed from the container.
- Never reach over a sterile field.
- When pouring sterile solutions into sterile containers or basins, do not touch the sterile container with the solution bottle. Once opened and first poured, use bottles of liquid entirely. If any liquid is left in the bottle, discard it.
- Never use an outdated article. Unwrap it, inspect it, and, if reusable, rewrap it in a **new** wrapper for sterilization.

Surgical Hand Scrub

The purpose of the surgical hand scrub is to reduce resident and transient skin flora (bacteria) to a minimum. Resident bacteria are often the result of organisms present in the hospital environment. Because these bacteria are firmly attached to the skin, they are difficult to remove. However, their growth is inhibited by the antiseptic action of the scrub detergent used. Transient bacteria are usually acquired by direct contact and are loosely attached to the skin. These are easily removed by the friction created by the scrubbing procedure.

Proper hand scrubbing and the wearing of sterile gloves and a sterile gown provide the patient with the best possible barrier against pathogenic bacteria in the environment and against bacteria from the surgical team. The following steps comprise the generally accepted method for the surgical hand scrub.

1. Before beginning the hand scrub, don a surgical cap or hood that covers all hair, both head and facial, and a disposable mask covering your nose and mouth.
2. Using approximately 6 ml of antiseptic detergent and running water, lather your hands and arms to 2 inches above the elbow. Leave detergent on your arms and do not rinse.
3. Under running water, clean your fingernails and cuticles, using a nail cleaner.
4. Starting with your fingertips, rinse each hand and arm by passing them through the running water. Always keep your hands above the level of your elbows.
5. From a sterile container, take a sterile brush and dispense approximately 6 ml of antiseptic detergent onto the brush and begin scrubbing your hands and arms.
6. Begin with the fingertips. Bring your thumb and fingertips together and, using the brush, scrub across the fingertips using 30 strokes.
7. Now scrub all four surface planes of the thumb and all surfaces of each finger, including the webbed space between the fingers, using 20 strokes for each surface area.
8. Scrub the palm and back of the hand in a circular motion, using 20 strokes each.
9. Visually divide your forearm into two parts, lower and upper. Scrub all surfaces of each division 20 strokes each, beginning at the wrist and progressing to the elbow.
10. Scrub the elbow in a circular motion using 20 strokes.
11. Scrub in a circular motion all surfaces to approximately 2 inches above the elbow.
12. Do not rinse this arm when you have finished scrubbing. Rinse only the brush.
13. Pass the rinsed brush to the scrubbed hand and begin scrubbing your other hand and arm, using the same procedure outlined above.
14. Drop the brush into the sink when you are finished.
15. Rinse both hands and arms, keeping your hands above the level of your elbows, and allow water to drain off the elbows.
16. When rinsing, do not touch anything with your scrubbed hands and arms.
17. The total scrub procedure must include all anatomical surfaces from the fingertips to approximately 2 inches above the elbow.

18. Dry your hands with a sterile towel. Do not allow the towel to touch anything other than your scrubbed hands and arms.

19. Between operations, follow the same hand-scrub procedure.

Gowning and Gloving

If you are the scrub corpsman, you will have opened your sterile gown and glove packages in the operating room before beginning your hand scrub. Having completed the hand scrub, back through the door holding your hands up to avoid touching anything with your hands and arms. Gowning technique is shown in the steps of figure 2–4. Pick up the sterile towel that has been wrapped with your gown (touching only the towel) and proceed as follows:

1. Dry one hand and arm, starting with the hand and ending at the elbow, with one end of the towel. Dry the other hand and arm with the opposite end of the towel. Drop the towel.

2. Pick up the gown in such a manner that hands touch only the inside surface at the neck and shoulder seams.

3. Allow the gown to unfold downward in front of you.

Figure 2–4.—Gowning.

4. Locate the arm holes.

5. Place both hands in the sleeves.

6. Hold your arms out and slightly up as you slip your arms into the sleeves.

7. Another person (circulatory) who is not scrubbed will pull your gown onto you as you extend your hands through the gown cuffs.

Continue the process by opening the inner glove packet on the same sterile surface on which you opened the gown. The entire gloving process is shown in the steps of figure 2–5.

1. Pick up one glove by the cuff using your thumb and index finger.

2. Touching only the cuff, pull the glove onto one hand and anchor the cuff over your thumb.

3. Slip your gloved fingers under the cuff of the other glove. Pull the glove over your fingers and hand, using a stretching side-to-side motion.

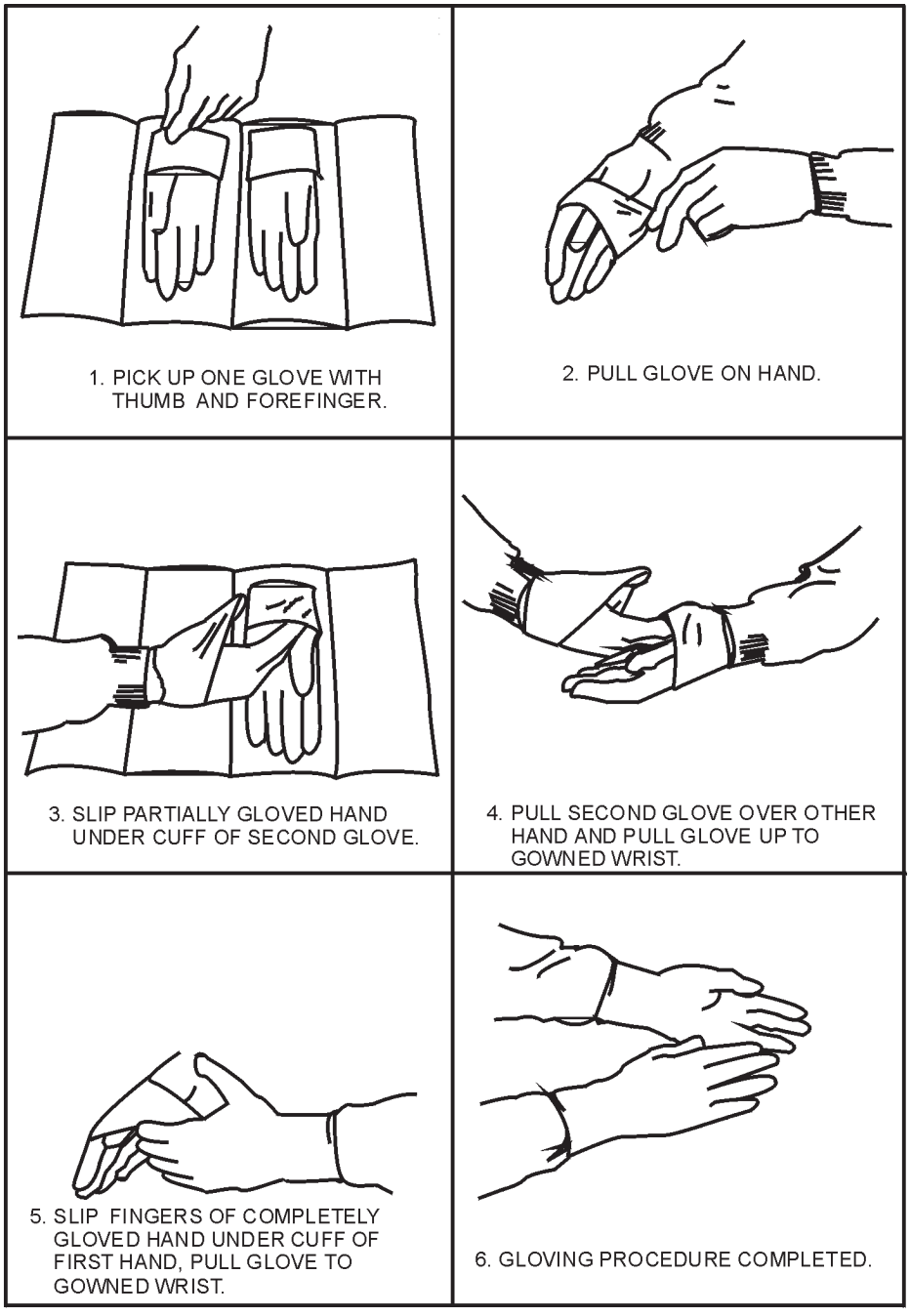

Figure 2–5.—Gloving.

4. Anchor the cuff on your thumb. With your fingers still under the cuff, pull the cuff up and away from your hand and over the knitted cuff of the gown.
5. Repeat the preceding step to glove your other hand.
6. The gloving process is complete.

To gown and glove the surgeon, follow these steps:

1. Pick up a gown from the sterile linen pack. Step back from the sterile field and let the gown unfold in front of you. Hold the gown at the shoulder seams with the gown sleeves facing you.
2. Offer the gown to the surgeon. Once the surgeon's arms are in the sleeves, let go of the gown. Be careful not to touch anything but the sterile gown. The circulator will tie the gown.
3. Pick up the right glove. With the thumb of the glove facing the surgeon, place your fingers and thumbs of both hands in the cuff of the glove and stretch it outward, making a circle of the cuff. Offer the glove to the surgeon. Be careful that the surgeon's bare hand does not touch your gloved hands.
4. Repeat the preceding step for the left glove.

Cleaning the Operating/ Treatment Room

Cleanliness in the operating room is an absolute must. Cleaning routines must be clearly understood and carefully followed. The cause of postoperative wound infections have, on occasion, been traced to the operating room. Since no two patients are alike and all patients have their own "resident" bacteria, every surgical case must be considered to be contaminated.

At the beginning of each day, all the fixtures, equipment, and furniture in each operating room will be damp-dusted with an antiseptic germicide solution. During the operation, keep the room clean and orderly at all times. Should sponges be dropped on the floor, or if blood or other body fluids spill, clean the area immediately using a disinfectant germicide solution and a clean cloth. Between operations, clean all used items. The area of the floor occupied by the surgical team must be cleaned using the wet vacuum method. If a wet vacuum is not available, mops may be used, but a clean mop head must be used following each operation. Gowns and gloves must be removed before leaving the room. All linens and surgical drapes must be bagged and removed from the room. All trash and disposable items must be bagged and taken from the room. All instruments must be washed by gloved hands or placed in perforated trays and put through a washer/sterilizer.

At the completion of the day's operations, each operating room should be terminally cleaned using an antiseptic germicide solution and the following tasks accomplished.

- Clean all wall- or ceiling-mounted equipment.
- Clean all spotlights and lights on tracks.
- Thoroughly scrub all furniture used in the room, including the wheels.
- Clean metal buckets and other waste receptacles and, if possible, put them through the washer/sterilizer.
- Clean scrub sinks.
- Machine scrub the entire floor in each room. If a machine is not available, use a large floor brush.
- Suction up the disinfectant germicide solution that is used on the floor, using a wet vacuum. If mops are used, make sure a clean mop head is used for each room.

NOTE: The use of mops in the operating room is the LEAST DESIRABLE method of cleaning.

MANAGEMENT OF INFECTIOUS WASTE

LEARNING OBJECTIVE: *Identify medical waste sorting, packaging, handling, and disposal procedures.*

Concern about potentially adverse effects of infectious waste on public health and the environment has gained widespread media attention. While scientific evidence shows that infectious waste is no greater threat to the environment or public health than residential solid waste, medical facilities are perceived to be a source of pollution. It is, therefore, imperative that a medical facility establish an effective plan for dealing with infectious waste. This plan should include the segregation, packing and handling, storage, transportation, treatment, and disposal of such

debris. The management plan should establish recordkeeping systems and personnel training programs, and should incorporate the minimally acceptable management standards for Navy MTFs and DTFs (as contained in BUMEDINST 6280.1, *Management of Infectious Waste*).

INFECTIOUS WASTE

Infectious waste is liquid or solid waste containing pathogens in sufficient numbers and of sufficient virulence to cause infectious disease in susceptible hosts exposed to the waste. Several examples are:

- sharps (needles, scalpel blades),
- microbiology waste (cultures, stocks containing microbes),
- pathological waste (human tissue, body parts),
- liquid waste (blood, cerebrospinal fluid), and
- medical waste from isolation rooms.

TREATMENT AND DISPOSAL METHODS FOR INFECTIOUS WASTE

Several steps should be used in the treatment and disposal of infectious waste. These steps include the identification of waste; segregation, sorting, packaging,

Table 2–2.—Treatment and Disposal Methods for Infectious Waste

Types of Infectious Waste	Methods of Treatment	Methods of Disposal
Microbiological	Steam sterilization [1] Chemical disinfection [2] Incineration [3]	Sanitary landfill
Pathological [5]	Incineration [3 & 4] Cremation	Sanitary landfill Burial [6]
Bulk blood and other potentially infectious liquids	Gelatinization [6]	Sanitary sewer [7] Sanitary landfill [8]
Sharps in sharps containers	Steam sterilization Incineration	Sanitary landfill Sanitary landfill

[1] For effective sterilization, the temperature must be maintained at 121° C (250° F) for at least 90 minutes, at 15 pounds per square inch of gauge pressure. *Bacillus stearothermophilus* spore strips must be used weekly to test the sterilization process.

[2] Chemical disinfection is most appropriate for liquids.

[3] Ash remaining after incineration may go directly to the sanitary landfill, unless state or local regulations require testing the ash for characteristics of hazardous waste.

[4] Disposal of placentas by grinding with subsequent discharge to a sanitary sewer is acceptable unless prohibited by county or local laws/regulations.

[5] Burial or cremation is acceptable.

[6] Must be further treated by steam sterilization or incineration.

[7] Discharge to a sanitary sewer is acceptable unless prohibited by county or local laws/regulations.

[8] Must be treated by steam sterilization or incineration before landfill disposal.

handling, transporting, and treating of waste; and, finally, disposal of the waste. The treatment and disposal methods shown in table 2–2 are the minimally acceptable standards.

SUMMARY

This chapter has introduced you to many basic patient-care procedures and philosophies, such as patient rights and responsibilities, professional conduct, reporting and assessment procedures, patient education, and patient safety precautions. Additionally, you have learned about inpatient care and the various types of patients you will encounter as a Hospital Corpsman. Finally, you have been introduced to standard rules of hygiene, aseptic techniques, and the management of medical waste. Having a good grasp of these areas of patient care will give you a good base from which you can grow as a Hospital Corpsman.