

**PART I:**  
**BECOMING A HEALTH  
CARE WORKER**



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# 1

# Introduction to Being a Health Care Worker



## SECTIONS

- 1.1** History of Health Care
- 1.2** Becoming a Health Care Worker



**A**s you will learn in this chapter, many people have contributed to finding the causes and cures of illness, injuries, and other disabling conditions. Others have identified different body parts and their functions. Some notable discoveries include Louis Pasteur's identification of the process that makes milk safe for human consumption. This process is called pasteurization, in honor of the founder. Bartolommeo Eustachio discovered the tube leading from the ear to the throat, an important finding that was named Eustachian tube after the discoverer. Others include the Salk vaccine to prevent polio (named after Dr. Jonas Salk) and the Roentgen Ray (now called x-ray) after Wilhelm Roentgen the founder.

Assume you could find a cure for or identify a cause of a disease or illness, such as cancer, childhood arthritis, hepatitis C, autism, or asthma. Write your condition and cure (or cause) on a 3 × 5 card, name it, and share your discovery with the class. Why did you choose this particular disease or condition?

## SECTION



# 1.1

## History of Health Care

### **Background**

Health care has developed and changed throughout history. Knowing the history of health care helps you understand current procedures, practices, and philosophies. The experiences and discoveries of the past led to the advances of today. Today's achievements could not have occurred without the trials and errors of the past. When you understand the primitive beginnings of medicine, you appreciate the advances made during the past 5,000 years.

### **Objectives**

When you have completed this section, you will be able to do the following:

- Match key terms with their correct meanings.
- Identify scientists and explain what they contributed to medicine.
- Choose one era in the history of health care and explain how health care technology changed.
- Discuss advances in medicine in the twentieth century.
- Research and report on possible advances in medicine for the twenty-first century.
- Explain the origin of medical ethics and the impact of medical advances on ethics.
- Compare health care in the past with health care in the twentieth and twenty-first centuries.
- Explain current trends in health care.

## Early Beginnings

**Primitive** human beings had no electricity, few tools, and poor shelter. Their time was spent protecting themselves against **predators** and finding food. They were **superstitious** and believed that illness and disease were caused by supernatural spirits. In an attempt to heal, tribal doctors performed ceremonies to **exorcise** evil spirits. One such ceremony involved an early form of **trephining**, whereby the tribal doctor would remove part of the cranium, with a primitive tool, to exorcise demons. They also used herbs and plants as medicines. Some of the same medicines are still used today. Here are some examples:

- Digitalis comes from the foxglove plant. Today it is given in pill form, **intravenously**, or by injection. In early times, people chewed the leaves of the foxglove plant to strengthen and slow the heartbeat.
- Quinine comes from the bark of the cinchona tree. It controls fever, relieves muscle spasms, and helps prevent malaria.
- Belladonna and atropine are made from the poisonous nightshade plant. They relieve muscle spasm, especially in gastrointestinal (GI) pain.
- Morphine is made from the opium poppy. It is an effective medication used for treating severe pain. It is addicting and is used only when nothing else will help.

## Medicine in Ancient Times

The Egyptians were the earliest people to keep **accurate** health records. They were superstitious and called upon the gods to heal them. They also learned to identify certain diseases. In the Egyptian culture, the priests acted as physicians. They used medicines to heal disease, learned the art of splinting fractures, and treated disorders by bloodletting with the use of leeches. Interestingly, today, leeches are being used as a treatment to help heal skin grafts and restore blood circulation. Their primary function is to drain blood, since pooled blood around a wound can threaten the healing of tissue.

The ancient Chinese, from as early as the Stone Age, were first to use primitive acupuncture therapies. These early medical pioneers learned to treat a variety of illness and disease with stone tools. Their methods eventually developed into the advanced practice of Chinese acupuncture, still in common use today.

To the ancient Greeks, medicine was considered an art and not just a profession. Physicians had a noble and sacred mission, often housed in sacred temples of healing. They were the first to study the causes of disease and to determine that illnesses may have natural, rather than spiritual, causes. They kept records on what they observed and what they thought caused illness. The Greeks understood the importance of searching for new information about disease. This research helped eliminate superstition. In addition, Greeks further developed the use of massage and herbal therapies.

During ancient times, religious custom did not allow bodies to be dissected. The father of medicine, Hippocrates (ca. 469–377 B.C.), based his knowledge of **anatomy** and physiology on **observation** of the external body. He kept careful notes of the signs and **symptoms** of many diseases. With these records he found that disease was not caused by supernatural forces. Hippocrates wrote the standard of **ethics**

### **primitive**

(PRIM i tiv)

Ancient or prehistoric.

### **predators**

(PRED uh ter)

Organisms or beings that destroy.

### **superstitious**

(soo per STISH uhs)

Trusting in magic or chance.

### **exorcise**

(EK sawr sahyz)

To force out evil spirits.

### **trephining**

(TRAY fin ing)

Surgically removing circular sections (of bone, for example).

### **intravenously**

(in truh VEE nuhs lee)

Directly into a vein.

### **accurate**

(AK yer it)

Exact, correct, or precise.

### **anatomy**

(uh NAT uh mee)

The science dealing with the structure of animals and plants.

### **observation**

(ob zur VEY shuhn)

Act of watching.

### **symptom**

(SIMP tuhm)

A sign or indication of something.

### **ethics**

(ETH iks)

A system of moral principles.

## Apply It

The class should divide into multiple groups, each responsible for creating a timeline and researching medical discoveries and people of a specific era.

### FIGURE 1.1

*How did the Romans help to develop health care as we know it today?*

#### convents

(KON vent s)  
Establishments of nuns.

#### monasteries

(MON uh ster ee)  
Homes for men following religious standards.

#### custodial

(kuh STOH dee uhl)  
Marked by watching and protecting rather than seeking to cure.

called the Oath of Hippocrates. This standard is the basis for today's medical ethics. Physicians still take this oath.

The Greeks observed and measured the effects of disease. They found that some disease was caused by lack of sanitation. The Romans learned from the Greeks and developed a sanitation system. They brought clean water into their cities by way of aqueducts (waterways). They built sewers to carry off waste. They also built public baths with filtering systems. This was the beginning of public health and sanitation.

The Romans were the first to organize medical care. They sent medical equipment and physicians with their armies to care for wounded soldiers. Roman physicians kept a room in their houses for the ill. This was the beginning of hospitals. (Figure



1.1) Public buildings for the care of the sick were established. Physicians were paid by the Roman government. It is interesting to note that the Roman physician wore a death mask. This mask had a spice-filled beak, which the Romans believed protected them from infection and bad odors.

## The Dark Ages (A.D. 400–800) and the Middle Ages (A.D. 800–1400)

When the Roman Empire was conquered by the Huns (nomads from the north), the study of medical science stopped. For a period of 1,000 years, medicine was practiced only in **convents** and **monasteries**. Because the Church believed that life and death were in God's hands, the monks and priests had no interest in how the body functioned. The primary treatment was prayer. Medication consisted of herbal mixtures, and care was **custodial**. Monks collected and translated the writings of the Greek and Roman physicians.



## Science Link



### Lyme Disease

Because of scientific research, epidemics are much less common today. If not for modern day medicine and scientific research, the United States may have experienced an epidemic situation with Lyme disease.

The first case of Lyme disease was reported in Old Lyme, Connecticut in 1975. Since then, cases of Lyme disease have been reported in most parts of the United States. However, this disease can be detected by a blood test and treated with antibiotics. If caught early enough, Lyme disease may cause little or no complications.

Lyme disease is caused by a bacteria carried by ticks. The ticks contract the bacteria by biting a mouse or deer infected with Lyme disease.

Humans contract the disease if bitten by an infected tick.

Initial symptoms may include a rash around the area of the bite and flu-like symptoms, including, chills, fever, fatigue, and body aches. If the infection is not treated, it can cause severe joint pain and neurological deficiencies and even heart related problems.

Meningitis (inflammation of the tissues around the brain and spinal chord), Bell's palsy (loss of muscle tone in the face), and numbness in limbs are some of the more severe effects of Lyme disease. In the most severe cases, paralysis can occur.

*Why is it beneficial to study the history of health care and how it has progressed into modern day medicine and health care practices?*

Terrible **epidemics** caused millions of deaths during this period. Bubonic plague (the black death) alone killed 60 million people. Other uncontrolled diseases included smallpox, diphtheria, syphilis, and tuberculosis. Today, these illnesses are not always life threatening. Scientists have discovered **vaccines** and medications to control these diseases. It is important to remember that some diseases can become epidemic if people are not vaccinated.

## **The Renaissance (A.D. 1350–1650)**

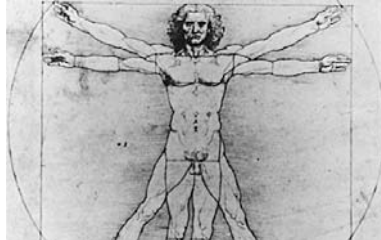
The Renaissance period saw the rebirth of learning. During this period, new scientific progress began. There were many developments during this period:

- The building of universities and medical schools for research.
- The search for new ideas about disease rather than the unquestioning acceptance of disease as the will of God.
- The acceptance of **dissection** of the body for study.
- The development of the printing press and the publishing of books, allowing greater access to knowledge from research.
- These changes influenced the future of medical science.

## **The Sixteenth and Seventeenth Centuries**

The desire for learning that began during the Renaissance continued through the next two centuries. During this time, several outstanding scientists added new knowledge. Here are some examples:

- Leonardo da Vinci studied and recorded the anatomy of the body. See da Vinci's depiction of the human body in **Figure 1.2**.
- William Harvey used this knowledge to understand **physiology**, and he was able to describe the circulation of blood and the pumping of the heart.
- Gabriele Fallopius discovered the fallopian tubes of the female anatomy.
- Bartolommeo Eustachio discovered the tube leading from the ear to the throat (Eustachian tube).
- Antonie van Leeuwenhoek (1632–1723) invented the microscope, establishing that there is life smaller than the eye can see. Van Leeuwenhoek scraped his teeth and found the bacteria that causes tooth decay. Although it was not yet realized, the germs that cause disease were now visible.
- Apothecaries, early pharmacies, started in this time. In medieval England, these apothecaries engaged in a flourishing trade in drugs and spices from the East.



**FIGURE 1.2**

*Human body as depicted by Leonardo da Vinci. (Courtesy of Galleria Dell' Accademia.) How does the figure illustrate Leonardo da Vinci's contribution to the medical field?*

### **physiology**

(fiz ee OL uh jee)  
The branch of biology dealing with the functions and activities of living organisms and their parts.

### **quackery**

(KWAK uh ree)  
Practice of pretending to cure diseases.

Unfortunately **quackery**, mass death from childbed fever, and disease continued. The causes of infection and disease were still not understood. Interestingly, infections are, even today, one of the leading causes of death.

## The Eighteenth Century

Many discoveries were made in the eighteenth century that required a new way of teaching medicine. Students not only attended lectures in the classroom and laboratory, but also observed patients at the bedside. When a patient died, they dissected the body and were able to observe the disease process. This led to a better understanding of the causes of illness and death. Also, in the eighteenth century a wider range of students was studying medicine. In 1849, Elizabeth Blackwell (1821–1910) became the first female physician in the United States. The study of physiology continued, and more new discoveries were made:

### stethoscope

(STETH uh skohp)  
Instrument used to hear sound in the body (e.g., heartbeat, lung sounds, bowel sounds).

### respiration

(res pu REY shuhn)  
The inhalation and exhalation of air, or breathing.

- René Laënnec (1781–1826) invented the **stethoscope**. The first stethoscope was made of wood. It increased the ability to hear the heart and lungs, allowing doctors to determine if disease was present.
- Joseph Priestley discovered the element oxygen. He also observed that plants refresh air that has lost its oxygen, making it usable for **respiration**.
- Benjamin Franklin's (1706–1790) discoveries affect us in many ways. His discoveries include bifocals, and he found that colds could be passed from person to person.
- Edward Jenner (1749–1823) discovered a method of vaccination for smallpox. Smallpox killed many people in epidemics. His discovery saved millions of lives. His discovery also led to immunization and to preventive medicine in public health.

## The Nineteenth and Twentieth Centuries

Medicine continued to progress rapidly, and the nineteenth century was the beginning of the organized advancement of medical science. Important events during the nineteenth and twentieth centuries include the following:

- Ignaz Semmelweis identified the cause of childbed fever (puerperal fever). Large numbers of women died from this fever after giving birth. Semmelweis noted that the patients of midwives (women who delivered babies but were not physicians) had fewer deaths. One of the differences in the care given by the physicians and the midwives was that the physicians went to the “dead room,” where they dissected dead bodies. These physicians did not wash their hands or change their aprons before they delivered babies. Their hands were dirty, and they infected the women. Semmelweis realized what was happening, but other physicians laughed at him. Eventually, his studies were proved correct by others, and handwashing and cleanliness became an accepted practice. Today, handwashing is still one of the most important ways that we control the spread of infection.
- Louis Pasteur (1822–1895), known as the “Father of **Microbiology**,” discovered that tiny **microorganisms** were everywhere. Through his experiments and studies, he proved that microorganisms cause disease. Before this discovery, doctors thought that microorganisms were *created by* disease. He also discovered that heating milk prevented the growth of bacteria. **Pasteurization** kills bacteria in milk. We still use this method to treat milk today. He created a vaccine for rabies in 1885.

### microbiology

(mahy kroh bahy OL uh jee)  
The branch of biology dealing with the structure, function, uses, and modes of existence of microscopic organisms.

### microorganisms

(mahy kroh AWR guh niz uhms)  
Organisms so small that they can only be seen through a microscope.

### pasteurization

(PAS chuh rahyz)  
To heat food for a period of time to destroy certain microorganisms.



- Joseph Lister (1827–1912) learned about Pasteur’s discovery that microorganisms cause infection. He used carbolic acid on wounds to kill germs that cause infection. He became the first doctor to use an **antiseptic** during surgery. Using an antiseptic during surgery helped prevent infection in the incision.
- Ernst von Bergmann developed **asepsis**. He knew from Lister’s and Pasteur’s research that germs caused infections in wounds. He developed a method to keep an area germ-free before and during surgery. This was the beginning of asepsis.
- Robert Koch (1843–1910) discovered many disease-causing organisms. He developed the culture plate method to identify pathogens and also isolated the bacterium that causes tuberculosis. He also introduced the importance of cleanliness and sanitation in preventing the spread of disease.
- Wilhelm Roentgen (1845–1923) discovered x-rays in 1895. He took the very first picture using x-rays of his wife’s hand. His discovery allowed doctors to see inside the body and helped them discover what was wrong with the patient.
- Paul Ehrlich discovered the effect of medicine on disease-causing microorganisms. His treatment was effective against some microorganisms but was not effective in killing other bacteria. His discoveries brought about the use of chemicals to fight disease. In his search to find a chemical to treat syphilis, he completed 606 experiments. On the 606th experiment, he found a treatment that worked.

### **antiseptic**

(an tuh SEP tik)  
Substance that slows or stops the growth of microorganisms.

### **asepsis**

(uh SEP sis)  
Sterile condition, free from all germs.

Before the nineteenth century, pain was a serious problem. Surgery was performed on patients without **anesthesia**. Early physicians used herbs, hashish, and alcohol to help relieve the pain of surgery. They even choked patients to cause unconsciousness to stop pain. Many patients died from shock and pain. During the nineteenth and twentieth centuries, nitrous oxide (for dental care), ether, and chloroform were discovered. These drugs have the ability to put people into a deep sleep so that they do not experience pain during surgery. The knowledge of asepsis and the ability to prevent pain during surgery are the basis of safe, painless surgery today.

### **anesthesia**

(an uhs THEE zhuh)  
Loss of feeling or sensation.

Scientists and physicians kept learning from the discoveries of the past. They continued to study and research new ways to treat diseases, illness, and injury. Some of the most important discoveries in the late 19th and 20th centuries included:

- Gerhard Domagk discovered sulfonamide compounds. These compounds were the first medications effective in killing bacteria. They changed the practice of medicine by killing deadly diseases.
- In 1892 in Russia, Dmitri Ivanovski discovered that some diseases are caused by microorganisms that cannot be seen with a microscope. They are called viruses. These viruses were not studied until the electron microscope was invented in Germany. These are some of the diseases caused by viruses:
  - Poliomyelitis.
  - Rabies.
  - Measles.
  - Influenza.
  - Chicken pox.
  - German measles.
  - Herpes zoster.
  - Mumps.

### FIGURE 1.3

*Sigmund Freud. How did Sigmund Freud's topic of study differ from other scientists' interests listed in this section?*



- Sigmund Freud (1836–1939) (**Figure 1.3**) discovered the conscious and unconscious parts of the mind. He studied the effects of the unconscious mind on the body. He determined that the mind and body work together. This led to an understanding of psychosomatic illness (physical illness caused by emotional conflict). His studies were the basis of **psychology** and **psychiatry**.

#### **psychology**

(sahy KOL uh jee)

The science of the mind or of mental states and processes.

#### **psychiatry**

(si KAHY ut tree)

The practice or science of diagnosing and treating mental disorders.

#### **replicate**

(REP li kate)

To reproduce or make an exact copy.

- Sir Alexander Fleming (1881–1955) found that penicillin killed life-threatening bacteria. The discovery of penicillin is considered one of the most important discoveries of the twentieth century. Before penicillin was discovered, people died of illnesses that we consider curable today, including pneumonia, gonorrhea, and blood poisoning.
- Jonas Salk (1914–1995) discovered that a dead polio virus would cause immunity to poliomyelitis. This virus paralyzed thousands of adults and children every year. It seemed to attack the most active and athletic people. It was a feared disease, and the discovery of the vaccine saved many people from death or crippling.
- In contrast to Salk's virus, Albert Sabin (1906–1993) used a live polio virus vaccine, which is more effective. This vaccine is used today to immunize babies against this dreaded disease.
- Francis Crick and James Watson discovered the molecular structure of DNA, based on its known double helix. Their model served to explain how DNA **replicates** and how hereditary information is coded on it. This set the stage for the rapid advances in molecular biology that continue to this day. In 1962, they won the Nobel Prize in Medicine for this discovery.
- Christian Barnard performed the first successful heart transplant in 1968.
- Ben Carson continues to be a pioneer in separating Siamese twins and performing hemispherectomies, surgeries on the brain to stop seizures.

The discovery of methods to control whooping cough, diphtheria, measles, tetanus, and smallpox saved many lives. These diseases kill unprotected children and adults. It is important for everyone to be immunized. Immunizations are available from doctors, clinics, hospitals, and public health services.

Our society is discovering new approaches to medical care every year. Patients/clients are being taught more about wellness, and they are learning more about self-care. The word healthy no longer just refers to a person's physical health. It also refers to a person's emotional, social, mental, and spiritual wellness. To help patients achieve this kind of holistic health, the medical community has become more open to alternative and complementary methods of care. People now go to ayurvedic practitioners, Chinese medicine practitioners, chiropractors, homeopaths, hypnotists, and naturopaths to help meet their medical needs. We will discuss these health care approaches and professions in greater detail in Chapter 7.

Family and friends are learning patient care skills, including how to perform detailed procedures. Nurses and technicians are visiting patients/clients at home or caring for them in an ambulatory care setting. Just a few years ago, patients were admitted to the hospital for surgery and recovered in the hospital over a period of several days. Today, many patients enter the hospital, have surgery, and are sent home the same day.

Doctors are now often practicing telemedicine. Health care providers may now e-mail, fax, or telephone important medical information to a patient or another health care provider. This has improved patient care by supplying health providers and patients with quicker access to information and greater opportunities for communication. **Telemedicine** includes consultative, diagnostic, and treatment services.

People are living longer and are usually healthier. New inventions and procedures have changed medicine as we once knew it. Here are some examples:

- The possibility of eliminating disabling disease through genetic research.
- The ability to transplant organs from a donor to a **recipient**.
- The ability to reattach severed body parts.
- The use of computers to aid in diagnosis, accurate record keeping, and research.
- The ability to use **noninvasive** techniques for diagnosis.
- The advancement in caring for the unborn fetus.
- The rediscovery and the medical profession's greater acceptance of alternative medicine and complementary medical practice including acupuncture, acupressure, herbal therapy, and healing touch.

Every day, science makes new progress. We are living in a time of great advancement and new understanding in medicine. People are living longer, creating a need to better understand **geriatric** medicine. This and OBRA—The Omnibus Budget Reconciliation Act passed in 1987 to provide a checklist for nursing home care facilities—will be covered in greater detail in Chapter 5. In addition, new types of facilities such as assisted living centers are being developed to better meet the physical, emotional, and mental needs of senior citizens. Frontiers in medical science include hope for treatment and cures for diabetes, cancer, AIDS, multiple sclerosis, arthritis, and muscular dystrophy.

### **telemedicine**

(TEL uh med uh sin)

Using electronic communications to exchange medical information from one site to another for the health and education of the patient or health care provider.

### **recipient**

(ri SIP ee uhnt)

One who receives.

### **noninvasive**

(non in VEY siv)

Not involving penetration of the skin.

### **geriatric**

(jer ee A trik)

Pertaining to old age.



## *Language Arts Link*

### **Medical Treatments: From Ancient Times through Present Day**

As you read in this chapter, medical practices, beliefs, and equipment has changed significantly over time. But, some methods—such as the use of some medicinal herbs and plants—that were used thousands of years ago are still being used today.

You need to create a report highlighting major medical practices and beliefs since ancient times. The Internet is a good place to start your research, but always be careful of information you find on the Internet. Use safe Internet practices, and make sure your sources are reliable and authoritative. Another good place to do research is in a library.

Create a new document on the computer, or get a blank sheet of paper. Include a title for your

report and a thesis statement (a sentence stating your main ideas) in the opening paragraph. Be sure to include information on ancient civilizations, the dark ages, the Middle Ages, the Renaissance, and the 16th–21st Centuries.

Proofread your work to see if you can improve it by making it clearer, more concise, or more interesting to read. Check the spelling and grammar and correct any errors. Be sure to cite any sources that you use in the format required by your instructor. Exchange reports with a classmate. Provide feedback and corrections as necessary, and then exchange back. Read your classmate's comments and revise your report as necessary.

## The Advancement of Nursing

In the nineteenth century, nursing became an important part of medical care. In 1860, Florence Nightingale (1820–1910) attracted well-educated, dedicated women to the Nightingale School of Nursing. (Figure 1.4) The graduates from this school raised the standards of nursing, and nursing became a respectable profession.

### FIGURE 1.4

*Florence Nightingale, founder of modern nursing. What effect did Florence Nightingale's work have on the medical field?*



Before this time, nursing was considered unsuitable for a respectable lady. The people giving care to patients were among the lowest in society—“too old, too weak, too drunken, too dirty, or too bad to do anything else.”

Florence Nightingale came from a cultured, middle-class family who opposed her interest in caring for the ill. However, she convinced her father to give her money to live, and she gained experience by volunteering in hospitals. During the Crimean War, she took a group of 38 women to care for soldiers dying from cholera. More soldiers were dying from cholera than from war injuries. She became a legend while she was there because of her dedication to nursing.

After the war she devoted much of her life to preparing reports on the need for better sanitation and construction and management of hospitals. Her primary goal was to gain effective training for nurses. The public established a Nightingale fund to pay for the training, protection, and living costs of nurses. This was established in recognition of her services to the military during the Crimean War.

### FIGURE 1.5

*Clara Barton, founder of the Red Cross. What experiences led Clara Barton to establish the American Red Cross?*



She also designed a hospital ward that improved the environment and care of the patients. Prior to this time, patients were crowded into small areas that were often dirty. The ward that she designed allowed for a limited number of beds, permitted circulation of air, had windows on three sides, and was clean.

During this time, Clara Barton (1821–1912) served as a volunteer nurse in the American Civil War. (Figure 1.5) After the war, she established a bureau of records to help search for missing men. She also assisted in the organization of military hospitals in Europe during the Franco-Prussian War.

Barton campaigned for the United States to sign the Treaty of Geneva, which produced relief for sick and wounded soldiers. These experiences led her to establish the American Red Cross in 1881 and to serve as its first president.

Another step forward in the field of nursing was contributed by Lillian Wald (1867–1940). She was an American public health nurse and social reformer. She established the Henry Street Settlement in New York to bring nursing care into the homes of the poor. This led to the Visiting Nurse Service of New York. Today, visiting nurse services are found in most communities.

## Patient Care Today

Nursing care has changed many times throughout the years. Patients have been cared for by teams that included a registered nurse as team leader, a licensed vocational nurse or practical nurse (LVN/LPN) as a medication nurse, and a nursing assistant who provided personal care. In primary care nursing, which followed team nursing, all patient care was provided by a registered nurse.

Today, unlicensed assistive caregivers are part of the patient caregiver team. There are many titles and new job descriptions for these positions, including clinical partner, service partner, nurse extender, health care assistant, and patient care assistant. These new positions extend the role of entry-level employees. The nurse assistant performs additional tasks, such as **phlebotomy** and recording an electrocardiogram (EKG). Employees from departments other than nursing learn patient care skills. Environmental service workers and food service workers may help with serving food and providing some routine patient care. The registered nurse delegates patient care tasks according to the training and expertise of the assistive personnel.

Because of the scientific advances in health care the role of the nurse has evolved into a more technological role. This has created a need for a complex mix of the technological nurse and the holistic caregiver. Never before has it been more important to maintain the art of nursing which includes compassion, comfort, and the ability to see the patient as an individual and a member of a family and a community.

### **phlebotomy**

(fluh BOT uh mee)

Practice of opening a vein by incision or puncture to remove blood.



## Language Arts Link

### Historical Contributions

Today we would never expect a doctor to examine us with a wooden stethoscope or for surgery to be performed without anesthesia, but, as you learned in this chapter, that wasn't always the case.

Select a medical device, procedure, or person who made an important contribution to health care. Begin your task by searching library resources or the Internet to learn more about your topic. Record the details and facts that you find. Be sure to cite any sources that you use in the format required by your instructor.

Create a new document on the computer, or get a blank sheet of paper. Write a descriptive title for your report. In paragraph form detail what you learned about your subject. Be sure to proof-read your work to see if you can improve it by making it clearer, more concise, or more interesting to read. Check the spelling and grammar and correct any errors. Exchange reports with a classmate. Provide feedback and corrections as necessary, and then exchange back. Read your classmate's comments and revise your report as necessary.

## Apply It

Create a newscast, with medical reporters covering current trends in health care. After appropriate research, each reporter can use charts or live interviews to help present the topic. Video tape the newscast and play it to the class.

## Career Connection

If there is a Biotechnology Company in your community, ask for a group tour that focuses on the different processes necessary for inventing a new pharmaceutical product and getting it to market.

If there is no Biotechnology Company in your community, you may (1) complete an Internet search of a leading company to identify the process that is used to develop a new pharmaceutical product; or (2) assist as a guide for a museum that has a display of the evolution of medical practices, or the "Body Works" or "Body Relevant" displays that are traveling around the country.

## A Look Back and an Overview of the Future

In the twentieth and twenty-first centuries, medicine has made great strides in improving health care. During these centuries, we have experienced many changes, including these:

- Antibiotics for bacterial diseases.
- Improved life expectancy.
- Organ transplants.
- Healthier hearts (reduced smoking, better diets).
- Dentistry without pain.
- Noninvasive diagnosis with computers (CAT, MRI).
- End of smallpox.
- Childhood immunizations.
- New understanding of DNA and genetics.
- Control of diabetes with the discovery of insulin.
- Decline in polio.
- Medical machines, such as those for kidney dialysis and the heart-lung machine.
- Test tube babies.
- HMOs provided an alternative to private insurance, and hospice was organized.

The future of medicine holds many promises for better health. Current and future research will provide us with many new advances, including these:

- Cure for AIDS.
- Decrease in the cases of malaria, influenza, leprosy, and African sleeping sickness.
- Cure for genetically transferred diseases (e.g., Tay-Sachs, muscular dystrophy, multiple sclerosis, cerebral palsy, Alzheimer's, lupus).
- Improved treatment for arthritis and the common cold.
- Isolation of the gene that causes depression.
- Use of electronics to allow disabled persons to walk.
- Nutritional therapy to decrease the number of cases of schizophrenia.

## Medical Ethics

Advancement in medicine creates new problems. How will the recipient of an organ be chosen? Who will be allowed to receive experimental drugs? How will the creation of in vitro embryos be ethically managed? Is it ethical to provide continuing confidentiality about AIDS patients, or should they be required to report their condition? Does a terminally ill patient have the right to assisted death (euthanasia)? There are many questions now, and there will be more questions in the future as health care changes.

## Summary

You have learned that the science of health care has grown and developed over the last 5,000 years. These changes increased the average life expectancy. Our standards of living improved with the progress of medical science. The dedication of the many scientists discussed in this section is responsible for the improvements in health care that we enjoy today. Their research is the foundation of the high technology that is developing in medicine.

### SECTION

### 1.1

### Review Questions

1. What did early human beings believe caused illness and disease?
2. Who were the first people to organize medical care?
3. Name two ways that medical progress was made during the Renaissance period.
4. Which discoveries in the nineteenth and twentieth centuries led to safer surgeries?
5. How does technology continue to improve medical care today?
6. Explain how society's view of women in medicine has changed over the years.



## What's New?

### **New Vaccines**

In the eighteenth century, Edward Jenner discovered a method of vaccination for smallpox that helped to end the epidemic. In the twenty-first century, doctors and scientists continue to do research to develop vaccines for diseases and illnesses.

While today's adults received only a few vaccines for illnesses such as measles, mumps, and rubella, when they were children, today's children are offered a variety of vaccines. One such vaccine is Varivax. This vaccine helps to prevent, or at least lessen, the effects of chicken pox. In previous generations, children had to suffer the uncomfortable symptoms of this virus. The vaccine gives today's children some degree of protection.

Other new vaccines now offered to children are Gardasil, a vaccine developed to protect girls from getting cervical cancer when they get older, and Menactra, a vaccine developed to prevent children from getting meningitis.

*How might these new vaccines affect people's lives and the cost of health care?*



## Learn By Doing: Section 1.1 Activity

1. Complete Worksheet 1 from the Student Activity Guide.
2. Complete Worksheet 2 and Worksheet/Activity 3.
3. Ask your instructor for directions to complete Worksheets/Activities 4, 5, 6, and 7.
4. When you are confident that you can meet each objective listed above, ask your instructor for the section evaluation.

### SECTION

## 1.2

# Becoming a Health Care Worker

### Background

A health care worker is a well-trained professional whose top concern is patient welfare. Health care workers must have a thorough knowledge of current health procedures. They must maintain a professional appearance and practice professional behavior. They must also safeguard the confidentiality of patient information. You must keep in mind all of these standards of behavior as you become a health care worker.

### Objectives

When you have completed this section, you will be able to do the following:

- Match key terms with their correct meanings.
- Discuss the importance of proper health care training.
- Describe the proper appearance for a health care worker.
- Discuss standards of behavior.
- Discuss the importance of confidentiality when working with patient records.



### Health Care Education

When you have decided to become a health **professional**, it is important to choose a quality health care education program that fits your interests. Technical, community, or four-year colleges in your area may have **accredited** health care programs. These programs offer a variety of degrees, including:

- Certification, where a person is certified as being able to competently complete a job, usually by the passing of an examination. (Note: Levels of certification, licensure, and accreditation are covered in depth in Chapter 3.)
- Associates degree, usually awarded after completion of a 2-year program.

#### professional

(pro FESH uh nuhl)

One who is paid for their work.

#### accredited

(a KRED dit ted)

Attested and approved as meeting prescribed standards.



- Bachelor's degree, usually awarded after completion of a 4-year program.
- Master's degree, a post-graduate degree awarded after completion of a 1 to 6-year program.
- Doctoral degree, the highest certificate of membership in the academic community.

Visit web sites of these schools, to see which program appeals to you most. Visit each college and talk to students before you enroll. You may also talk to health professionals in local clinics or hospitals, to see where they received their education.

After enrolling in a health care program, be sure to work hard at your studies. Health care information can be complicated and detailed. It is important for you to learn all procedures correctly, so you can provide the best treatment to patients.

Health care procedures and knowledge change all the time. Even after you are employed as a health care professional, it is important for you to continue your education. Take any training sessions that are provided by your health care facility. Read professional journals to learn about new health breakthroughs. Discuss procedures with other health care professionals in your facility, to make sure you are all providing the most up-to-date treatment.

Continuing education credits (CEUs) are required for maintenance of certification or advancement in many positions. This is to insure that health care professionals stay current on developments in their fields to provide the best patient care.

In the health care field, there is a rise among multicompetent workers. Multicompetent workers are trained in one field or occupation and then receive additional education to work in a second field or occupation. In addition, another opportunity in health care professions is that of the entrepreneur. The entrepreneur organizes, manages, and assumes the risks of a business. In the health care field, entrepreneurs often work under the direction of a physician or dentist.

## Appearance and Hygiene

A professional **appearance** makes a statement about your **commitment** to patient care. A well-groomed and well-dressed staff signals that everyone in the facility is interested in the welfare of the patient. A clean appearance reassures patients who may be anxious and sick that the staff is efficient, professional, and capable of providing necessary medical service. The following are **recommendations** for maintaining a well-groomed, professional appearance:

1. Dress according to your facility's dress code, including uniform. This usually means that clothes will be clean, neat, and in good repair. They should not be of extreme fashion. Undergarments should match the body color, so as not to "show." When wearing a skirt, wear full-length hose without runs.
2. Keep jewelry to a minimum (e.g., watch, stud earrings, and a ring). Jewelry can cause injury to the patient and the professional (if the patient grabs on to it), as well as transmit germs. Body piercings do not indicate a professional appearance, and can cause infections.
3. Wear your name badge every day, in view of patients/clients. People need to be able to relate to you, and to call you if they need you. It also helps them identify who is assisting them.

### **appearance**

(uh PEER ents)

The way someone or something looks.

### **commitment**

(kuh MIT ment)

A pledge or promise.

### **recommendations**

(rek uh men DAY shuns)

Suggestions.

## hygiene

(HI jean)

The practice of keeping clean.

### Community Service

Present a fashion show of what to wear (or not wear) in a professional setting. The narrator can provide information as to why the look is appropriate or inappropriate. The student models will represent each look. This can be video-taped, or you may be able to present your fashion show at a local long-term care facility or hospital.

4. Wear clean and appropriate shoes every day.
5. Keep your hair clean.
6. Follow rules of good **hygiene**:
  - a. Brush your teeth at least twice a day.
  - b. Floss daily.
  - c. Use mouthwash or breath mints.
  - d. Bathe daily.
  - e. Use unscented deodorant. Remember that odors can be offensive to patients that are ill and nauseated and some patients may be allergic to perfumes and deodorant.
  - f. Wear your hair up and off your collar. You do not want your hair to fall on a patient when working with them, nor do you want to block their view

#### Female

7. Keep makeup conservative (e.g., no dark, heavy makeup).
8. Do not use perfume or cologne, for the same reason as you would use unscented deodorant.
9. Keep nails short, clean, and bare or only use light-colored nail polish. Long nails can scratch a patient. Polish can cover up dirt and can chip and contaminate a patient's wound or dressing.

#### Male

10. Do not use cologne or strong aftershave, for the same reason as you would use unscented deodorant.
11. Keep beard or mustache neatly trimmed.
12. Shave daily. No stubble!

We will discuss the personal appearance and good health of health care professionals in greater detail in Chapter 4.

### FIGURE 1.6

*Health care workers at a nurse's station are well-groomed and professional. Why do the health care workers in the photograph appear professional?*



## Standards of Behavior

As a health care worker, you should always behave professionally. By practicing the following set of behaviors, you show respect for patients and your fellow health care workers:

1. Maintain a calm, **courteous** manner.
2. Listen carefully when patients or other health care workers are speaking with you.
3. Monitor patients appropriately, in order to ensure their safety.
4. Perform tasks efficiently and carefully.
5. Do not gossip about patients or other health care workers.
6. Do not use coarse or offensive language.
7. Do not practice horseplay or other dangerous behaviors.
8. Watch for hazardous situations and correct any hazards that you see.
9. Follow all safety procedures that are required by your health care facility.

**courteous**  
(KUR tee us)  
Polite.

### *Apply It*

Working in pairs, or teams of three, role-play these traits in a medical scenario. Make up 3 × 5 cards with each characteristic and each career (veterinarian, EMT, dentist, etc.) noted, and pick an assignment. The remaining students need to identify which trait they are acting out and which career.

## Personal Characteristics

In addition to professional behavior, health care workers who exhibit the following personal characteristics will be more involved and interested in the welfare of their patients and in being a critical part of the medical team:

1. Empathy—the action of understanding, being aware of, being sensitive to, and experiencing the feelings, thoughts, and experiences of another.
2. Honesty—the quality, condition, or characteristic of being fair, truthful, and morally upright.
3. Dependability—to be reliable or trustworthy.
4. Willingness to learn—the openness to admit that you don't know the answer or that you can be helped to understand a situation more fully.
5. Patience—the ability to put up with waiting, delay, or provocation without becoming annoyed or upset, or to act calmly when faced with difficulties.
6. Acceptance of criticism—the ability to deal with disapproval or a suggestion that something can be improved.
7. Enthusiasm—excited interest in or eagerness to do something.
8. Self-motivation—energetic, ambitious and able to get things done without being directed by others.
9. Tact—ability to avoid giving offense; an intuitive sense of what is right or appropriate.
10. Competence—the ability to do something well, measured against a standard, especially ability acquired through experience or training.
11. Responsibility—accountability; the state of being accountable to somebody or for something.
12. Discretion—tact; the good judgment and sensitivity needed to avoid embarrassing or upsetting others.
13. Team player—somebody who works cooperatively; a member of a group who cooperates with other people and who subordinates personal interests in order to achieve a common goal.

**maintain**

(meyn TEYN)

Keep up.

**converse**

(KUHn vurs)

Talk, have a conversation.

**stance**

(stans)

The way you stand.

### *Apply It*

Set up a role play situation—a mock “come to work” activity in which one person is a medical assistant and the other is a relative of a “difficult” patient, who is asking for confidential information. Ask the patient to evaluate the medical assistant’s professional appearance, body language and behavior. Then, switch roles.

**confidentiality**

(kon fuh den chee AL uh tee)

A promise to keep certain information secret.

**reprimanded**

(REP ree man did)

Punished.

## Body Language

Every move that we make sends a message. Positive messages come from good eye contact, smiling, and paying close attention to the person we are interacting with. Negative messages cause the person with whom we interact to doubt the efficiency of the staff responsible for patient care.

1. Make eye contact with patients as they enter the health care facility. This will make them feel welcome.
2. **Maintain** eye contact as you **converse** with patients. This will let them know you are interested in hearing what they have to say.
3. Smile. Let people know that you’re friendly.
4. Keep an open **stance**. (Crossed arms or hands indicate an unwillingness to listen or a barrier in communication.)
5. Give your full attention to one patient at a time, even when you have multiple tasks (e.g., telephone, other patients).
6. Keep your hands away from your mouth when speaking. This makes it a more “open” exchange.
7. Sit or stand at eye level with patients as you converse. Avoid standing over patients when conversing.

## Maintaining Confidentiality

Maintaining the **confidentiality** of medical records is critical. Medical records contain private information that must not be shared with people who are not involved in the patient’s health care. If some private information gets into the wrong hands, it may be used to damage the patient’s personal reputation or financial well-being.

Each patient signs a confidentiality form before receiving treatment. This form is a legally binding document that promises that the medical facility will protect patient information. Any health care worker who does not follow procedures to ensure patient confidentiality may be **reprimanded**.

As a health care worker, you should learn your health care facility’s policies and procedures related to confidentiality. Carefully follow these procedures to protect patient privacy.

## Summary

In this section, you learned the professional appearance of a health care worker shows their commitment to patient care and the practice of professional behavior shows respect to patients. Confidentiality is an important part of staying within legal boundaries and as a health care worker it is your responsibility to ensure patient confidentiality by learning your facility’s policies and procedures.

1. How do you determine which health care education best matches your interests?
2. Why is proper health care training important?
3. List the recommendations for maintaining a well-groomed, professional appearance.
4. List five standards of behavior and list five personal characteristics for health care workers.
5. Why is it important to use positive body language?
6. As a health care worker, why is it important to learn your facility's policy and procedures related to confidentiality?



### *Learn By Doing: Section 1.2 Activity*

1. Complete Worksheet 1.
2. Ask your teacher for directions to complete Worksheets/Activities 3 through 5.
3. When you are confident that you can meet each objective for this section, ask your teacher for the section evaluation.
4. Prepare responses to each item listed in Chapter Review.

# Chapter 1 Review

## Chapter Review Questions

1. List three scientific discoveries that have made health care what it is today. (1.1)
2. Explain two current trends in how patients receive health care. (1.1)
3. Explain the role of the nurse in the medical field today. (1.1)
4. Explain telemedicine. (1.1)
5. Give three examples of how new inventions and procedures have changed medicine over the years. (1.1)
6. Why do you need to learn all of the complicated health care procedures? (1.2)
7. Why is a health care worker's personal appearance important? (1.2)
8. Identify the standards of behavior for health care workers. (1.2)
9. Give three examples of positive body language. (1.2)
10. Why is it important to maintain the confidentiality of medical records? (1.2)

## Activities

1. Pick an era—Renaissance, sixteenth and seventeenth centuries, or the eighteenth century. What was medicine like going into that era? How did medicine change in that time period? What (or who) were the key influences? Are these advances still in use today, or have we replaced them?
2. You are working in a clinic that deals with people who have a variety of diseases that carry some “social stigma.” What can you do to create an atmosphere of confidence and openness with your clients?

## Case Studies

1. A patient is experiencing heart problems and GI difficulties. What would have been done for this in ancient times? What would be done today?
2. You have decided that you want to pursue a career as a health care professional. What does this entail, other than choosing a field and studying hard? What other factors will impact your success as a health care worker?

## Thinking Critically

1. **History of Medicine**—Create a timeline that shows the major advancements in medicine from Ancient Times through to the twentieth century. What do you consider to be the single most important development and why?
2. **Professionalism**—If you exhibit a professional look and demeanor, your clients and colleagues will have more confidence in you. Why is this? Give specific examples of positive and negative behaviors and appearance factors.
3. **Confidentiality**—You are expected to always keep confidentiality in mind, particularly when working in areas to which clients have access. What are three specific steps that you can take that would help maintain confidentiality?

## Media Connection

Use the Companion Web site for additional interactive learning activities.

## Portfolio Connection

Planning and preparing for a career is a process that allows you to look back on your experiences and learn from them. You can evaluate the things in your past that worked for you and those that did not.

You now have an opportunity to create a file that reflects what you learn. This file is called a *vocational portfolio*. Your portfolio will contain documents that show what you have learned during your vocational preparation. Your work will show the abilities and skills you gain throughout your training.

You will also create a job search packet that helps you identify ways to share your portfolio with schools or potential employers. Developing your portfolio provides a chance to express the positive results of your learning experiences in a professional manner.

Think about a time when you surprised yourself by accomplishing something that you were not sure you could do. What caused you to try it when you were unsure about it? What went well in that experience? What would you do differently? Explain your answers in a short paper. Your explanation must clearly identify your self-evaluation and show how you would approach uncertain experiences in the future.

This assignment helps you review and evaluate your past experience. Some of the future assignments for your portfolio will require a similar process, with a focus on your vocational training. Turn in this assignment to your instructor. When you create your portfolio in Chapter 2 your teacher will return it to you.



### PORTFOLIO TIP

**As you build your portfolio, remember that you will want to show how your strengths have helped you, and how you have learned and changed from previous experiences. This will be invaluable when presenting yourself to a potential employer. It will showcase your ability to deal with new situations and to learn from your mistakes.**