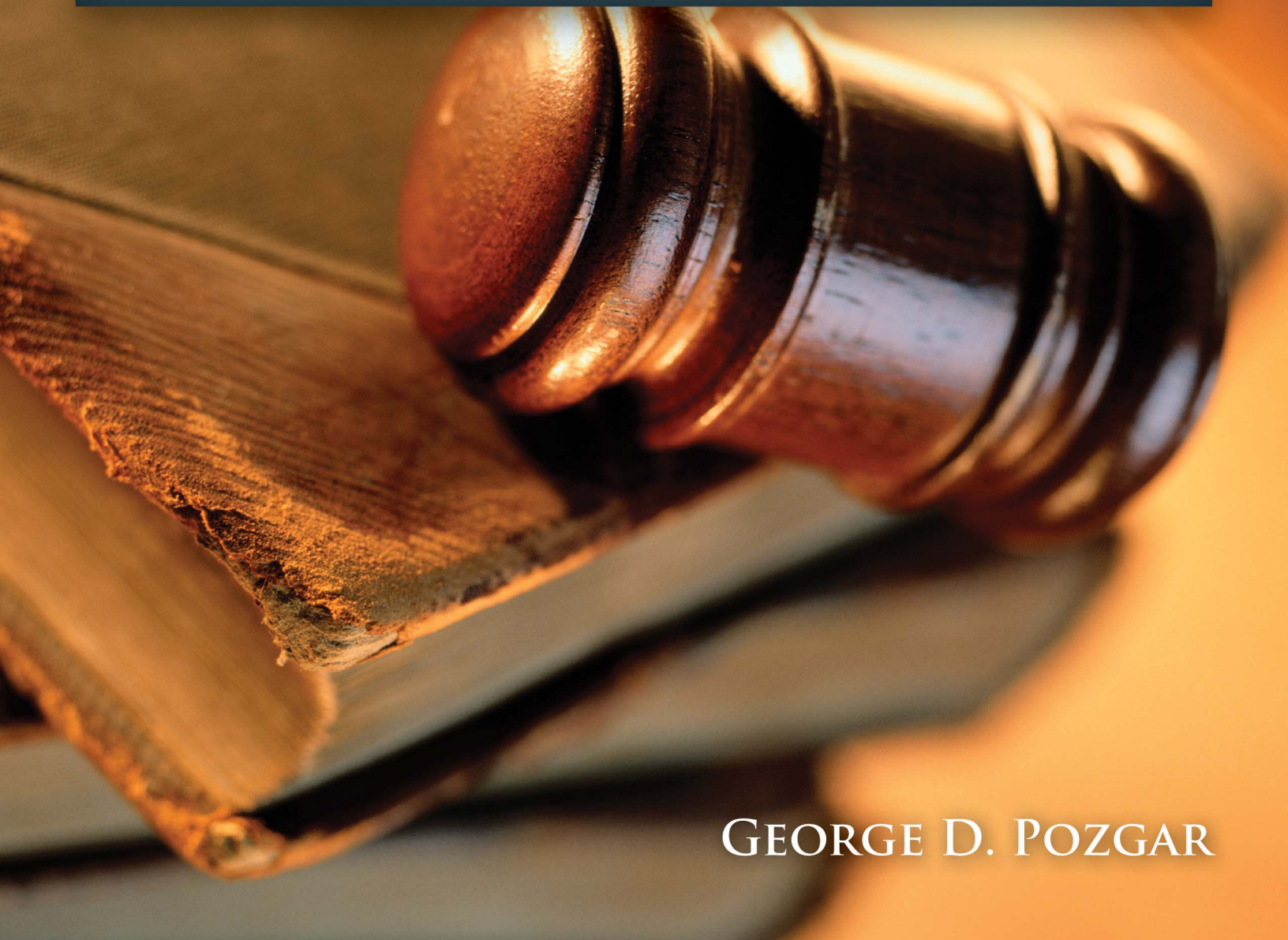


Twelfth Edition

LEGAL ASPECTS

OF HEALTH CARE ADMINISTRATION



GEORGE D. POZGAR

Twelfth Edition

LEGAL ASPECTS

OF HEALTH CARE ADMINISTRATION

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Epigraph



I consider ethics, as well as religion, as supplements to law in the government of man.

—Thomas Jefferson, President of the United States (1743–1826)



In law a man is guilty when he violates the rights of others. In ethics he is guilty if he only thinks of doing so.

—Immanuel Kant, Philosopher (1724–1804)



Books are the carriers of civilization. Without books, history is silent, literature dumb, science crippled, thought and speculation at a standstill. I think that there is nothing, not even crime, more opposed to poetry, to philosophy, ay, to life itself than this incessant business.

—Henry David Thoreau, Author, Poet, Philosopher (1817–1862)



It is curious—curious that physical courage should be so common in the world, and moral courage so rare.

—Mark Twain, American Author, Humorist (1835–1910)



In civilized life, law floats in a sea of ethics.

—Earl Warren, Chief Justice of the United States (1891–1974)



How far you go in life depends on your being tender with the young, compassionate with the aged, sympathetic with the striving, and tolerant of the weak and the strong—because someday you will have been all of these.

—George Washington Carver, American Inventor (1864–1943)

Preface



He has achieved success who has lived well, laughed often and loved much; who has gained the respect of intelligent men and the love of little children; who has filled his niche and accomplished his task; who has left the world better than he found it, whether by an improved poppy, a perfect poem, or a rescued soul; who has never lacked appreciation of earth's beauty or failed to express it; who has always looked for the best in others and given them the best he had; whose life was an inspiration; whose memory a benediction.

—Bessie Stanley

Legal Aspects of Health Care Administration, Twelfth Edition, which has evolved from its previous 11 editions, continues to be the most comprehensive and engaging book encompassing both the legal and ethical issues of healthcare administration. The *Twelfth Edition* continues its tradition of providing a solid foundation in a wide range of current healthcare topics in an understandable format that carefully guides the reader through the complex maze of law and ethics, as well as an overview of practical ways to improve the quality and safety in the delivery of patient care. As in previous editions, the *Twelfth Edition* serves as a valuable tool for both undergraduate and graduate programs. Additionally, as has been well recognized by practicing healthcare professionals, *Legal Aspects of Health Care Administration* continues to be a valuable reference tool in their day-to-day work activities.

The author infuses life into the book through legal case studies that have been litigated in the courtroom or reported in the press, as well as real-world events through reality checks that have been experienced by healthcare professionals. The author's approach inspires dynamic discussion and excitement in the learning process, thus creating an atmosphere of interest and participation, which is conducive to learning.

Although the court cases relating examples of malpractice are often mirror images of the failures of medicine, this *Twelfth Edition* is a comprehensive resource from which the reader will learn how the law, ethics, and medicine intersect. Taken as a whole, the content of this book serves as a reminder to its readers that they must learn from the mistakes and tragedies experienced by others to avoid repeating them. The legal cases and resulting headlines should stand as a reminder of the responsibility caregivers have to the profession they have chosen. With new estimates that as many as 400,000 patients are dying annually as a result of medical errors, according to a September 2013 study reported in the *Journal of Patient Safety*, it is mandatory that caregivers be ever mindful of the nature of the life and death settings within which they work. At the time of this writing the headlines seem to keep repeating themselves. For example, on December 4, 2014, an Oregon hospital's medication error led to the death of a 65-year-old patient. This error resulted in three employees being placed on administrative leave. The knowledge gained here will help prevent the caregiver from becoming the next headline.

Although there will always be a next time for human error, the reader who grasps the contents in this book and understands its lessons will better understand how failures can turn to success and the pain of past mistakes can turn to hope.

About the Book

Legal Aspects of Health Care Administration, Twelfth Edition, lays a strong foundation in both health law and ethics. Chapter 1 provides an overview of the historical development of hospitals as influenced by medical progress, allowing the reader to look at their successes and failures through the centuries and then drawing conclusions about what can be done to avoid repeating the failures of the past. Chapter 2 begins with an introduction to government organization, sources of law, and government ethics, and Chapter 3 progresses to a discussion of ethical theories, principles, virtues and values, and related topics. Chapters 4 and 5 introduce the reader to negligent and intentional torts, progressing to criminal aspects of health care in Chapter 6 and contract law in Chapter 7 as they relate to health care. The reader is then introduced to civil procedure and trial practice in Chapter 8. The journey continues with a discussion of legal issues involving corporations in Chapter 9, medical staff organization and physician liability in Chapter 10, nursing and the law in Chapter 11, and a discussion of various hospital departments and allied professionals in Chapter 12.

The first 12 chapters provide a solid basis for a more complete understanding of the following remaining chapters: Chapter 13, patient consent; Chapter 14, legal reporting requirements; Chapter 15, medical records; Chapter 16, procreation and ethical issues; Chapter 17, AIDS; Chapter 18, end-of-life issues; Chapter 19, patient rights and responsibilities; Chapter 20, labor relations; Chapter 21, employment-at-will and discharge; Chapter 22, employee rights and responsibilities; Chapter 23, professional liability insurance; Chapter 24, national health insurance and managed care; Chapter 25, tort reform; and a glossary of common legal and ethics vocabulary.

The practical application of ethics in the healthcare setting is accomplished by interspersing the thoughts of great minds through Quotes, applicable Newspaper Clippings, provider and organizational experiences through Reality Checks

designated by a symbol, and patient experiences through legal rulings and summaries through Case Law. When reviewing the various cases in this book, the reader should consider both the ethical and legal implications of a dilemma and how they intertwine with one another. It is important to recognize that the decisions in the cases described are generally governed both by applicable state and federal statutes and common-law principles. When reviewing a case, the reader must keep in mind that the case law and statutes of one state are not binding in another state.

There is no one magic legal or ethics book that can possibly compress the plethora of issues that have bombarded the healthcare industry into one book. This book is merely a beginning of the study of legal and ethical issues and is an adventure that all caregivers should take. Although there is always much more that could be discussed on any one topic, the reader will understand that this book provides a solid foundation for practical everyday use as well as further study.



Each life is like a novel. Filled with moments of happiness, sadness, crisis, defeat, and triumph. When the last page has been written, will you be happy or saddened by what you read?

—Author Unknown

The reader is presented in the *Twelfth Edition* with real-world life experiences that bring the reader through a journey of learning that provides an effective transitional stage from the classroom to the reality of the everyday work environment.

When people consider matters of law and ethics, they are usually considering matters of freedom in regard to personal choices, one's obligations to other sentient beings, or

judgments about human character and the right to choose. The author’s objective is to equip the reader with the background knowledge necessary to understand that legal and ethical behavior begins with recognizing that we have alternatives and choices in our behavior. To make good decisions, we must first understand that they will be only as good as our knowledge of what is right and what is wrong. This book is not an indictment of any profession or organization. There is a deluge of ethical issues in every aspect of human existence. Although cultural differences, politics, and religion influence who we are, it is all of life’s experiences that affect who we will become.



IT’S YOUR GAVEL

“It’s Your Gavel” boxes offer the reader an opportunity to make decisions about actual court cases. Many chapters begin with a case that has been reviewed by the courts in state or federal jurisdictions. After reviewing each case and subsequent relevant material, readers can take on the role of the fact finder and render a decision. Then, at the end of the respective chapters, the actual court findings and reasoning for each case are given in “The Court’s Decision” box.

CASE PRESENTATION FORMAT

When reviewing the various cases in this book, the reader should consider what happened, why things went wrong, what the relevant legal issues are, and how the event could have been prevented. The reader should also consider how, if one fact in a particular case changed, the outcome might have been different. What would that fact be? The cases presented in the text have been chosen because of the frequency of their occurrence. The general format for each boxed case review is as follows:

Title: Each case has a title that signals the type of case to be reviewed.

Case Citation: The case citation describes where a court’s opinion in a particular case can be located. It identifies the

parties in the case, the text in which the case can be found, the court writing the opinion, and the year in which the case was decided. For example, the case citation of *Bouvia v. Superior Court (Glenchur)*, 225 Cal. Rptr. 297 (Cal. Ct. App. 1986) is described as follows:

- *Bouvia v. Superior Court (Glenchur)*: Identifies the basic parties involved in the lawsuit
- 225 Cal. Rptr. 297: Identifies the case as being reported in volume 225 of the *California Reporter* on page 297
- Cal. Ct. App. 1986: Identifies the case as being decided in the California Court of Appeals in 1986

Students who wish to research a specific case should visit a law school library, which provides access to various state and regional reporters.

Facts: A review of the material facts of the case is presented.

Issues: This is the disputed point or question the judge or jury must decide. The issues discussed in any given case are selected for review based on medical and legal pertinence to the healthcare professional. Although any one case in this text may have multiple issues, emphasis is placed on those issues considered to be more relevant for the reader in the context of the topic being discussed.

Holding: The court’s ruling based on the facts, issues, and applicable laws pertaining to a case is summarized.

Reason: The rationale for the court’s decision based on the facts, issues, and relevant laws surrounding a case is presented.

Discussion: Discussion questions, although prompted by a particular case, may not necessarily be germane to the facts of the case. The questions are merely presented as opportunities for discussion and in no way add to the facts of a specific case decision.

Author’s Note: This book is not a definitive treatise, but rather a portrait of the ever-evolving story of health care through the study of law and ethics. It is educational in nature and should not be considered a substitute for legal advice on any particular issue. Moreover, each chapter presents an overview, rather than an exhaustive treatment, of the various topics discussed.

The author, legal reviewers, and/or publisher cannot be responsible for any errors or omissions, including additions to, interpretations of, and/or changes in the regulations presented in this book.

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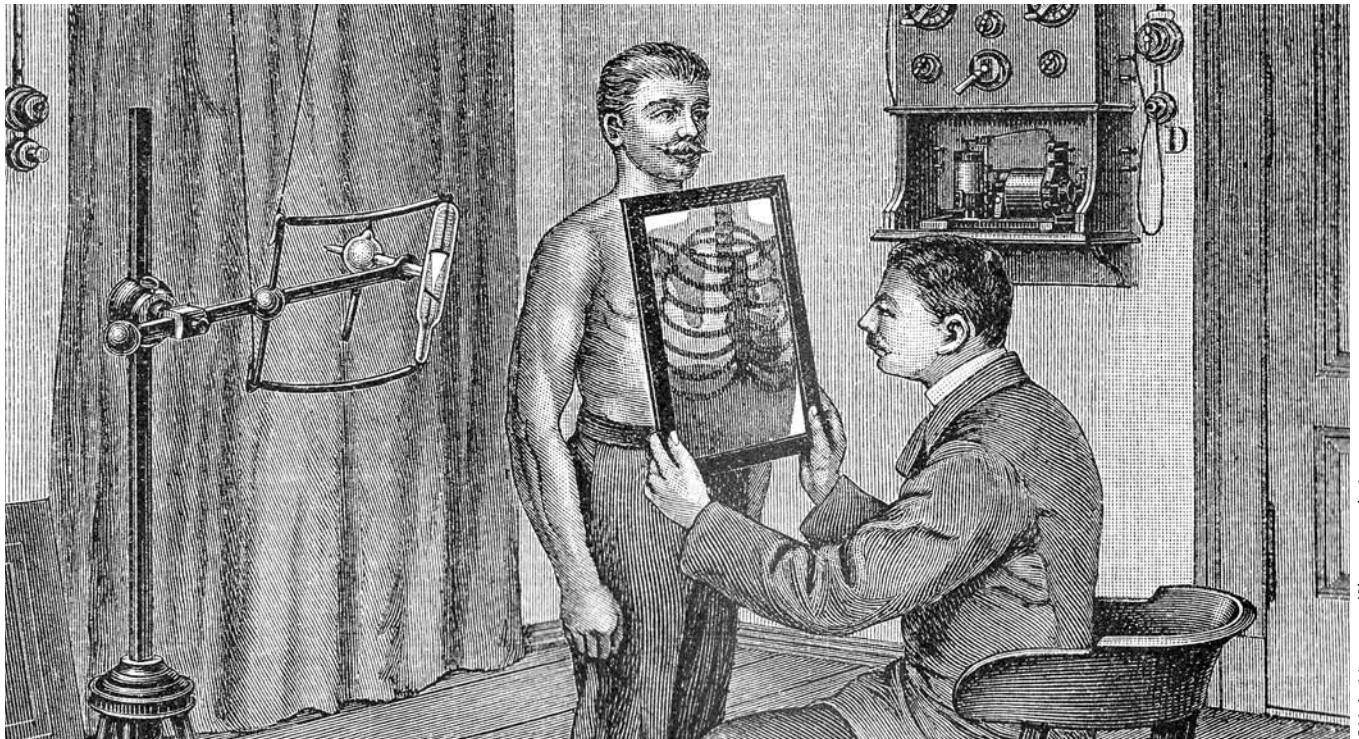
I am grateful to the very special people in the more than 1,000 hospitals and ambulatory sites from Alaska to Puerto Rico with whom I have consulted, surveyed, and provided education over many years. Their shared experiences have

served to remind me of the importance to make this book more valuable in the classroom and as a reference for practicing healthcare professionals.

To my students in healthcare law and ethics classes at the New School for Social Research, Molloy College, Long Island University–C.W. Post Campus, Saint Francis College, and Saint Joseph’s College; my intern from Brown University; my resident in hospital administration from The George Washington University; and those I have instructed through the years at various seminars, I will always be indebted for your inspiration.

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Reflections on the Past



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I was created at the end of the Renaissance, watched pirates rule the oceans as Ivan the Terrible ruled Russia, and witnessed the arrest of Galileo for believing the earth revolved around the sun.

—I Am History

Learning Objectives

The reader, upon completion of this chapter, will be able to:

- Explain how societal conflicts due to politics, religion, and warfare have both impeded the growth of hospitals and contributed to their progress.
- Describe how advances in medicine led to the rise of the modern-day hospital and improved the quality of patient care.



We can learn from history how past generations thought and acted, how they responded to the demands of their time and how they solved their problems. We can learn by analogy, not by example, for our circumstances will always be different than theirs were. The main thing history can teach us is that human actions have consequences and that certain choices, once made, cannot be undone. They foreclose the possibility of making other choices and thus they determine future events.

—Gerda Lerner¹

This chapter provides the reader with a brief overview of the advance of civilization as disclosed in the history of hospitals. A study of the past often reveals errors that then can be avoided, customs that persist only because of tradition, and practices that have been superseded by others that are more effectual. The past may also bring to light some long-abandoned practices, which may be revived to some advantage. The story of the birth and evolution of the hospital portrays the triumph of civilization over barbarism and the progress of civilization toward an ideal characterized by an interest in the welfare of the community.



History is relevant to understanding the past, defining the present, and influencing the future.

—Author Unknown

The importance of the study of history is undeniable. The Spanish philosopher George Santayana (1863–1952) recognized this all too well when he said, “Those who cannot remember the past are condemned to repeat it.” George Bernard Shaw (1856–1950), an Irish dramatist and socialist, recognized the tragedies of the history of civilization when he said, “If history repeats itself, and the unexpected always happens, how incapable must man be of learning from experience.” Yes, Santayana and Shaw are right: If we do not learn from the mistakes of the past, we are doomed to repeat them. Progress in health care will only prevail so long as advances in medicine are remembered and practiced by each new generation. Although the struggle to progress is a road filled with many pitfalls, hope still looms.

Martin Makary wrote in the *Wall Street Journal* that “Medical errors kill enough people to fill four jumbo jets a week . . . To do no harm going forward, we must be able to learn from the harm we have already done.”²²

EARLY HINDU AND EGYPTIAN HOSPITALS

Two ancient civilizations, the Hindu (in what is now India) and the Egyptian, had crude hospitals. Hindu literature reveals that in the 6th century BC, Buddha appointed a physician for every 10 villages and built hospitals for the crippled and the poor. His son, Upatiso, built shelters for the diseased and for pregnant women. These examples probably moved Buddha’s devotees to erect similar hospitals. Despite a lack of records, historians agree that hospitals existed in Ceylon as early as 437 BC.

During his reign from 273 to 232 BC, King Asoka built 18 hospitals that hold historical significance because of their

similarities to the modern hospital. Attendants gave gentle care to the sick, provided patients with fresh fruits and vegetables, prepared their medicines, gave massages, and maintained their personal cleanliness. Hindu physicians, adept at surgery, were required to take daily baths, keep their hair and nails short, wear white clothes, and promise that they would respect the confidence of their patients. Although bedside care was outstanding for those times, medicine was only beginning to find its way.

Egyptian physicians were probably the first to use drugs such as alum, peppermint, castor oil, and opium. In surgery, anesthesia consisted of hitting the patient on the head with a wooden mallet to render the patient unconscious. Surgery was largely limited to fractures, and medical treatment was usually given in the home. Therapy away from home was often available in temples, which functioned as hospitals.

GREEK AND ROMAN HOSPITALS

The term *hospital* derives from the Latin word *hospitalis*, which relates to guests and their treatment. The word reflects the early use of these institutions not merely as places of healing, but also as havens for the poor and weary travelers. Hospitals first appeared in Greece as *aesculapia*, named after the Greek god of medicine, Aesculapius. For many centuries, hospitals developed in association with religious institutions, such as the Hindu hospitals opened in Sri Lanka in the 5th century BC and the monastery-based European hospitals of the Middle Ages (5th century to 15th century AD). The Hotel-Dieu in Paris, a monastic hospital founded in 660 AD, is still in operation today.

In early Greek and Roman civilization, when medical practices were rife with mysticism and superstitions, temples were also used as hospitals. Every sanctuary had a sacred altar before which the patient, dressed in white, was required to present gifts and offer prayers. If a patient was healed, the cure was credited to miracles and divine visitations. If the patient remained ill or died, he or she was considered to be lacking in purity and unworthy to live.

Greek temples provided refuge for the sick. One of these sanctuaries, dedicated to Aesculapius, is said to have existed as early as 1134 BC at Titanus. Ruins attest to the existence of another, more famous Greek temple built several centuries later in the Hieron, or sacred grove, at Epidaurus. Here, physicians ministered to the sick holistically in body and soul. They prescribed medications such as salt, honey, and water from a sacred spring. They gave patients hot and cold baths to promote speedy cures and encouraged long hours of sunshine and sea air, combined with pleasant vistas, as an important part of treatment. The temple hospitals housed libraries and rooms for visitors, attendants, priests, and physicians. The temple at Epidaurus even boasted what might be described as the site

of the first clinical records. The columns of the temple were inscribed with the names of patients, brief histories of their cases, and comments as to whether or not they were cured.

The aesculapia spread rapidly throughout the Roman Empire, as well as through the Greek world. Although some hospitals were simply spas, others followed the therapy outlined by the leading physicians of the day. Hippocrates, for example, a physician born about 460 BC, advocated medical theories that have startling similarity to those of the present day. He employed the principles of percussion and auscultation, wrote intelligently on fractures, performed numerous surgical operations, and described such conditions as epilepsy, tuberculosis, malaria, and ulcers. He also kept detailed clinical records of many of his patients. Physicians like Hippocrates not only cared for patients in the temples, but also gave instruction to young medical students.

HOSPITALS OF THE EARLY CHRISTIAN ERA

Christianity and the doctrines preached by Jesus stressing the emotions of love and pity gave impetus to the establishment of hospitals, which, with the advance of Christianity, became integral parts of the church institution. These Christian hospitals, which replaced those of Greece and Rome, were devoted entirely to care of the sick, and accommodated patients in buildings outside the church proper.

The decree of Constantine in 335 AD closed the aesculapia and stimulated the building of Christian hospitals, which, during the 4th and 5th centuries, reached the peak of their development. Many were erected by the rulers of the period or by wealthy Romans who had converted to Christianity. By the year 500, most large towns in the Roman Empire had hospitals. Nursing, inspired by religion, was gentle and considerate, but soon began to discard the medical precepts of Hippocrates, Antyllus, and other early Greek physicians because of their pagan origins. Instead, health care turned toward mysticism and theurgy (the working of a divine agency in human affairs) as sources of healing.

Hospitals rarely succeeded during the centuries leading to the Middle Ages; only a few existed outside Italian cities. Occasional almshouses in Europe sheltered some of the sick, whereas inns along the Roman roads housed others. No provision appears to have been made for care of the thousands of helpless paupers who had been slaves and were later set free when Christianity was introduced into the Roman Empire.

ISLAMIC HOSPITALS

The followers of Mohammed were almost as dedicated as the Christians in caring for the sick. In Baghdad, Cairo, Damascus, Cordova, and many other cities under their

control, luxurious hospital accommodations were frequently provided. Harun al-Rashid, the glamorous caliph (a title for a religious or civil ruler claiming succession from Mohammad) of Baghdad (786–809 AD), built a system of hospitals, paying the physicians himself. Medical care in these hospitals was free. Approximately four centuries later, in 1160, a Jewish traveler reported that he had found as many as 60 dispensaries and infirmaries in Baghdad alone. The Persian physician Rhazes, who lived from approximately 850 to 923 AD, was skilled in surgery. He was probably the first to use the intestines of sheep for suturing and cleansed patient wounds with alcohol. He also gave the first rational accounts of smallpox and measles.

Islamic physicians like Rhazes received much of their medical knowledge from the persecuted Christian sect known as the Nestorians. Nestorius (Archbishop of Constantinople from April 428 to August 431), who was driven into the desert with his followers after having been appointed patriarch of Constantinople, took up the study of medicine. The school at Edessa in Mesopotamia, with its two large hospitals, eventually came under the control of the Nestorians, where they established a remarkable teaching institution. Eventually driven out of Mesopotamia by the orthodox bishop Cyrus, they fled to Persia, establishing the famous school at Gundishapur, which is considered to be the true starting point of Islamic medicine. Gundishapur was home to the world's oldest known teaching hospital and also comprised a library and a university. It was located in the present-day province of Khuzestan, in the southwest of Iran, not far from the Karun River.

Islamic medicine flourished up to about the 15th century. Physicians were acquainted with the possibilities of inhalation anesthesia. They instituted precautions against adulteration of drugs and developed a vast number of new drugs. Islamic countries also built asylums for the mentally ill 1,000 years before such institutions appeared in Europe. The people of Islam made a brilliant start in medicine, but never fulfilled the great promise that glowed in their early work in medical arts, and hospitalization was never fulfilled. Wars, politics, superstitions, and a nonprogressive philosophy stunted the growth of a system that had influenced the development of hospitals.

EARLY MILITARY HOSPITALS

Engraved on a limestone pillar dating back to the Sumerians (2920 BC) are pictures that depict, among other military procedures, the assemblage of the wounded. The Book of Deuteronomy records that Moses established outstanding rules for military hygiene. Out of the urgency of care for the wounded in battle came much of the impetus for medical progress. Hippocrates is quoted as saying that “war is the

only proper school for a surgeon.” Under the Romans, surgery advanced largely because of experience gained through gladiatorial and military surgery.

Throughout the centuries, warfare has been a two-edged sword, producing tragic events and at the same time providing an environment for the advancement of surgery and medicine. From an ethical point of view, the question arises: What surgical and medical advancements have been lost due to the failure of mankind to sit at the table of peace and compromise on differences based on logic and reason? Arguments between individuals and nations are best settled through a positive approach that must have reasonable compromise as its basis, as opposed to a negative approach, often involving who has the most lethal weapons.

MEDIEVAL HOSPITALS

Religion continued to be the most important factor in the establishment of hospitals during the Middle Ages. A number of religious orders created *hospitia*, or travelers’ rests, and infirmaries adjacent to monasteries that provided food and temporary shelter for weary travelers and pilgrims. One of these, the famous alpine hospice of St. Bernard, founded in 962, gave comfort to the weary and sent its renowned dogs to the rescue of lost mountain climbers.

The hospital movement grew rapidly during the Crusades, which began in 1096. Military hospital orders sprang up, and accommodations for sick and exhausted crusaders were provided along well-traveled roads. One body of crusaders organized the Hospitallers of the Order of St. John, which in 1099 established in the Holy Land a hospital capable of caring for 2,000 patients. Knights of this order took personal charge of service to patients and often denied themselves so that the sick might have food and medical care. For years, these institutions were the best examples of hospitals of that period.

Although physicians cared for physical ailments to afford relief, they rarely attempted to cure the sick. Dissection of a human body would have been sacrilege because the body was created in the image of God.

Finally, an active period of hospital growth came during the late 12th and early 13th centuries. In 1198, Pope Innocent III urged hospitals of the Holy Spirit to be subscribed for by the citizenry of many towns. He set an example by founding a model hospital in Rome, known as Santo Spirito in Sassia. Built in 1204, it survived until 1922, when it was destroyed by fire. In Rome, nine other hospitals were founded shortly after completion of the one in Sassia; it is estimated that in Germany alone, 155 towns had hospitals of the Holy Spirit during early medieval times.

Although most hospitals constructed during the Middle Ages were associated with monasteries or founded by religious groups, a few cities, particularly in England, built

municipal institutions. Like all hospitals of the period, the buildings were costly and often decorated with colorful tapestries and stained glass windows, but the interiors were frequently little more than large, drafty halls with beds lining each side. A few of the better institutions were arranged on the ward plan, usually built in the shape of a cross. Floors were made of red brick or stone, and the only ventilation came from the cupola in the ceiling.

With the spread of leprosy during the 12th and 13th centuries, lazar houses sprang up, supplying additional hospital facilities. Made up of crude structures, lazar houses were usually built on the outskirts of towns and maintained for the segregation of lepers rather than for their treatment. Special groups of attendants, including members of the Order of St. Lazar, nursed the patients. The group represented an important social and hygienic movement because their actions served to check the spread of epidemics through isolation. The group is credited for virtually stamping out leprosy.

During the same period of hospital growth, three famous London institutions were established: St. Bartholomew’s in 1137, St. Thomas’s before 1207, and St. Mary of Bethlehem in 1247. St. Bartholomew’s, founded by Rahere (the reported court jester of Henry I), cared for the sick poor but, unlike many hospitals of that day, was well organized. St. Thomas’s Hospital was founded by a woman who was later canonized St. Mary Overie. It burned in 1207, was rebuilt 6 years later, and was constructed again on a new site in 1228. St. Mary of Bethlehem was the first English hospital to be used exclusively for the mentally ill.

The Hotel-Dieu of Paris was probably typical of the better hospitals of the Middle Ages. Built at the beginning of the 13th century, the hospital provided four principal rooms for patients in various stages of disease, as well as a room for convalescents and another for maternity patients. Illustrations by artists of the time show that two persons generally shared one bed. Heavy curtains sometimes hung from canopies over the bed to afford privacy, but this advantage was more than offset by the fact that the draperies, which were never washed, spread infection and prevented free ventilation. The institution was self-contained, maintaining a bakery, herb garden, and farm. Often, patients who had fully recovered remained at the hospital to work on the farm or in the garden for several days in appreciation for the care they had received.

THE “DARK AGE” OF HOSPITALS

Pictures and records of hospitals during the Middle Ages illustrate how many hospitals commonly crowded several patients into one bed regardless of the type or seriousness of the illness. A mildly ill patient might be placed in the same bed as an occupant suffering from a contagious disease. A notable exception to the general deterioration in medicine during this era was the effort of those monks who copied by

hand and preserved the writings of Hippocrates and other ancient physicians.

The great Al-Mansur Hospital, built in Cairo in 1276, struck a contrast to the European institutions of the Middle Ages. It was equipped with separate wards for the more serious diseases and outpatient clinics. The handful of hospitals like Al-Mansur would lay the groundwork for hospital progress to come in later centuries.

HOSPITALS OF THE RENAISSANCE

During the revival of learning around the close of the 14th century, hundreds of medical hospitals in Western Europe received the new, more inquiring surgeons that the Renaissance produced. New drugs were developed, and anatomy became a recognized study. Ancient Greek writings were printed, and dissection was performed by such masters such as Leonardo da Vinci, known as the originator of cross-sectional anatomy, and Vesalius. Hospitals also became more organized. Memoranda from 1569 describe the duties of the medical staff in the civil hospital of Padua, a city that was home to the most famous medical school of the 16th century. These read:

There shall be a doctor of physic upon whom rests the duty of visiting all the poor patients in the building, females as well as males; a doctor of surgery whose duty it is to apply ointments to all the poor people in the hospital who have wounds of any kind; and a barber who is competent to do, for the women as well as the men, all the other things that a good surgeon usually does.³

The practice of surgery during the Renaissance became more scientific and progressive. Operations for lithotomy and hernioplasty were undertaken without the use of anesthetics, and surgery was practiced by the *long-robe surgeons*, a small group who were educated in the universities and permitted to perform all types of operations, and by the *short-robe surgeons*, the barbers who, in most communities, were allowed only to leech and shave the patient, unless permission was granted to extend the scope of treatment. Both groups were regarded as inferior to physicians.

In 1506, a band of long-robe surgeons organized the Royal College of Surgeons of Edinburgh. By 1540, both the long- and short-robe surgeons in England joined to form the Company of Barber-Surgeons of London. In 1528, Thomas Linacre, physician to Henry VIII, founded and became the first president of the Royal College of Physicians of England.

Although English physicians were organized during the 16th century, Henry VIII of England ordered that hospitals associated with the Catholic Church be given over to secular

uses or destroyed. The sick were turned out into the streets. Conditions in hospitals became so intolerable that the king was petitioned to return one or two buildings for the care of patients. Henry consented and restored St. Bartholomew's in 1544. Practically the only hope for the sick poor among outlying towns was to journey many miles to London.

The dearth of hospitals in England continued throughout the 17th century, when the medical school was developed. The French and the English quickly accepted what had originated in Italy—the first attempt to make medical instruction practical. St. Bartholomew's took the lead in education by establishing a medical library in 1667 and permitted apprentices to walk the wards for clinical teaching under experienced surgeons.

In 1634, an outstanding contribution was made to nursing by the founding of the order of the Daughters of Charity of St. Vincent de Paul. Originating at the Hotel-Dieu of Paris as a small group of village girls who were taught nursing by the nuns, the order grew rapidly and was transplanted to the United States by Mother Seton in 1809.

HOSPITALS OF THE 18TH CENTURY

During the 18th century, the building of hospitals began to revive. Because of poverty, the movement made slow progress in England, but a few hospitals were built and supported jointly by parishes. By 1732, there were 115 such institutions in England, some of them a combination of almshouse and hospital. As hospitals grew in number, new advances in health care began.

The Royal College of Physicians established a dispensary where medical advice was free and medicines were sold to the needy at cost. Controversies and lawsuits, however, brought an untimely end to this early clinic. Not discouraged by this experience, the Westminster Charitable Society created a similar dispensary in 1715. The same organization, in 1719, founded Westminster Hospital, an infirmary built by voluntary subscription, in which the staff gave its services gratuitously. Ten years later, the Royal College of Physicians in Edinburgh opened the Royal Infirmary. London Hospital, another notable institution, was founded in 1740. Admission of charity patients to the London Hospital was apparently by ticket because, among its historical relics, is an admission card. On the back of that card is a representation of a biblical scene drawn by the artist William Hogarth.

As hospitals worked to provide services to more people, scientists worked to provide better services. Filling a need in hospitals at the time was Desaguliers's 1727 invention of a machine for pumping fresh air into and foul air out of rooms. Used at first for prisons and public buildings, it later was installed in hospitals. Other mechanical improvements for the care of the sick were sadly wanting, but still worse were

the lack of cleanliness and the crude and careless treatment of patients.

In the Elizabethan period, with its materialistic and cold culture, the deterioration of hospital service that had set in under Henry the VIII had continued. The lowest point in the deterioration of hospitals came during the 18th and first half of the 19th centuries. Considering the increase in knowledge during the 18th century, development of educational opportunities, and steady growth in population and wealth, the few hospitals built at that time were inadequate. As far as hospital progress is concerned, the 18th century was not only decidedly uneventful; it was a period of retrogression. The full revival did not begin until well after the middle of the 19th century.

Antony van Leeuwenhoek (1632–1723) succeeded in making some of the most important discoveries in the history of biology. Although van Leeuwenhoek did not invent the first microscope, he was able to perfect it. His many discoveries included bacteria, free-living and parasitic microscopic protists, sperm cells, blood cells, and microscopic nematodes. His research opened up an entire world of microscopic life. Often referred to as the “father of microbiology,” van Leeuwenhoek had a pronounced influence on the creation of the sciences of cytology, bacteriology, and pathology. His discoveries have forever affected not only the delivery of health care in hospitals, but also the way health care is delivered in all settings.

EARLY HOSPITALS IN THE UNITED STATES

Manhattan Island claims the first account of a hospital in the New World, a hospital that was used in 1663 for sick soldiers. Fifty years later, in Philadelphia, William Penn founded the first almshouse established in the American colonies. The Quakers supported the almshouse, which was open only to members of that faith. However, Philadelphia was rapidly growing and also in need of a public almshouse. Such an institution for the aged, the infirm, and persons with mental illness was established in 1732. The institution later became the historic Old Blockley, which, in turn, evolved into the Philadelphia General Hospital.

Philadelphia was the site of the first incorporated hospital in America, the Pennsylvania Hospital. Dr. Thomas Bond wished to provide a place where Philadelphia physicians could treat their private patients. With the aid of Benjamin Franklin, Bond sought a charter for the Pennsylvania Hospital, which was granted by the Crown in 1751. Franklin helped design the structure, and in 1755, the hospital, quite modern in plan with a central administration unit and two wings, was opened to the public. The first staff consisted of Dr. Phineas Bond, Dr. Lloyd Zachary, and the founder, Dr. Thomas Bond, all of whom gave their services without remuneration for 3 years.

Rich in the history of hospitals, Philadelphia must also be credited with the first quarantine station for immigrants (created in 1743) and the first lying-in hospital (established in 1762), a private institution owned by the noted obstetrician William Shippen. The quality of American health care seemed to be improving.

Dr. John Jones, an American, published a book in 1775 calling attention to frightful conditions that existed in hospitals. He charged that hospitals abroad were crowded far beyond capacity and that Hotel-Dieu of Paris frequently placed three to five patients in one bed—putting the convalescent with the dying and fracture cases with infectious cases. He estimated that one fifth of the 22,000 patients cared for at Hotel-Dieu died each year. Wounds were washed daily with a sponge that was carried from patient to patient. The infection rate was said to be 100%, and mortality after amputation was as high as 60%. Jones’s call to action had a positive effect on American health care.

As late as 1769, New York City, with nearly 300,000 inhabitants, was without hospitals. In 1771, a small group of citizens, Dr. Jones among them, formed the Society of the New York Hospital and obtained a grant to build. The society purchased a five-acre site and made plans for a model structure that would allow a maximum of eight beds per ward and provide good ventilation. The hospital fell into the hands of the British troops during the American Revolution and was used as a barracks and military hospital.

During postwar reconstruction, the New York Hospital broadened its services. Under the supervision of Dr. Valentine Seaman, the hospital began providing instruction in nursing, and in 1779, it introduced vaccination in the United States and established an ambulance service. Other early American hospitals of historic interest include the first psychiatric hospital in the New World, founded at Williamsburg, Virginia, in 1773, and a branch of federal hospitals created by the passage of the U.S. Marine Hospital Service Act in 1798. Under this act, two marine hospitals were established in 1802: one in Boston and another in Norfolk, Virginia.

The Massachusetts General Hospital (MGH), which pioneered many improvements in medicine, originated in Boston. Its first patient, admitted in 1821, was a 30-year-old sailor.

More than a decade earlier, two Boston doctors had appealed to the city’s “wealthiest and most influential citizens” to establish a general hospital. The War of 1812 delayed the dream, but on July 4, 1818, the cornerstone was finally laid. The original building, designed by Boston’s leading architect, Charles Bulfinch, is still in use. One of the world’s leading centers of medical research and treatment has grown up around it. The original domed operating amphitheater, where anesthesia was first publicly demonstrated in 1846, is now a Registered National Historic Landmark.

MGH has achieved countless medical milestones, including the first successful reattachment of a human limb.⁴

In 1832, the Boston Lying-In Hospital opened its doors to women unable to afford in-home medical care. It was one of the nation's first maternity hospitals, made possible because of fundraising appeals to individuals and charitable organizations.

Despite the increased number of institutions providing care for the sick, the first half of the 19th century stands as a dark period in hospital history. Surgeons of the day had sufficient knowledge of anatomy to lead them to perform many ordinary operations, and as a result, more surgery was most likely undertaken than during any previous era. However, there was one important issue: Although the medieval and ancient surgeons had sought to keep wounds clean, even using wine in an attempt to accomplish this purpose, 19th-century surgeons believed *suppuration* (the production and discharge of pus) to be desirable and encouraged it. Hospital wards were filled with discharging wounds, which made the atmosphere offensive enough to warrant the use of perfume. Nurses of that period are said to have used snuff to make conditions tolerable. Surgeons wore their operating coats for months without washing. The same bed linens served several patients. Pain, hemorrhage, infection, and gangrene infested the wards. Mortality from surgical operations rated as high as 90% to 100%. Nathan Smith, in the second decade of that century, advocated a bichloride of mercury solution for reducing infection, but his ideas were ignored.

LATE 19TH CENTURY RENAISSANCE

Florence Nightingale, the famous English nurse, began her career by training at Kaiserswerth on the Rhine in a hospital and deaconess home established in 1836 by Theodor Fliedner and his wife. Florence Nightingale wrote disparagingly of her training there, particularly of the hygiene practiced. Returning to England, she put her own ideas of nursing into effect and rapidly acquired a reputation for efficient work.

By 1854, during the Crimean War, the English government, disturbed by reports of conditions among the sick and wounded soldiers, selected Florence Nightingale as the one person capable of improving patient care. Upon her arrival at the military hospital in Crimea with a small band of nurses whom she had assembled, she found that the sick were lying on canvas sheets in the midst of dirt and vermin. There was neither laundry nor hospital clothing, and beds were made of straw. She proceeded to establish order and cleanliness. She organized diet kitchens, a laundry service, and departments of supplies, often using her own funds to finance her projects.

Ten days after her arrival, the newly established kitchens were feeding 1,000 soldiers. Within 3 months, 10,000 soldiers were receiving clothing, food, and medicine. As a result of her work, the death rate substantially declined. She has been credited with observing:

A good nursing staff will perform their duties more or less satisfactorily under every disadvantage. But while doing so, their head will always try to improve their surroundings, in such a way as to liberate them from subsidiary work, and enable them to devote their time more exclusively to the care of the sick.⁵

Because of her organizational skills, many consider Florence Nightingale to be the first true healthcare administrator. Later she extended her administrative duties to include planning the details of sanitary engineering in a new military hospital.

As the field of nursing continued to progress, so did medicine. Crawford Long, for example, first used ether as an anesthetic in 1842 to remove a small tumor from the neck of a patient. He did not publish any accounts of his work until later, however, so the discovery is often attributed to W. T. G. Morgan, a dentist who developed sulfuric ether and arranged for the first hospital operation under anesthesia at MGH in 1846. Although not put to practical use immediately, ether soon took away some of the horror that hospitals had engendered in the public mind. Sir James Simpson first used chloroform as an anesthetic in 1847 for an obstetrical case in England.

The year 1847 also brought about the founding of the American Medical Association (AMA) under the leadership of Dr. Nathan Smith Davis. The association, among its main objectives, strived to improve medical education, but most of the organization's tangible efforts in education began at the close of the century. The AMA was a strong advocate for establishing a code of ethics, promoting public health measures, and improving the status of medicine.

The culmination of Florence Nightingale's work came in 1860, after her return to England. There, she founded the Nightingale School of Nursing at the St. Thomas's Hospital. From this school, a group of 15 nurses graduated in 1863. They later became the pioneer heads of training schools throughout the world.

In 1886, the Royal British Nurses' Association (RBNA) was formed. The RBNA worked toward establishing a standard of technical excellence in nursing. A charter granted to the RBNA in 1893 denied nurses a register, although it did agree to maintain a list of persons who could apply to have their name entered thereon as nurses.⁶

The first formally organized American nursing schools were established in 1872 at the New England Hospital for Women and Children in Boston (Brigham and Women's Hospital),

and then in 1873 at Bellevue, New Haven, and Massachusetts General Hospitals. In 1884, Alice Fisher was appointed as the first head of nurse training at Philadelphia Hospital's (renamed as the Philadelphia General Hospital in 1902) nurses' training school. She had the distinction of being the first Nightingale-trained nurse recruited to Philadelphia upon recommendation by Florence Nightingale.

Mrs. Bedford Fenwick, a nurse leader in the English nurse registration movement, traveled to Chicago in 1893 to arrange the English nursing exhibits to be displayed in the women's building at the World's Fair. As part of the Congress on Hospitals and Dispensaries, the nursing section included papers on establishing standards in hospital training schools, the establishment of a nurses association, and nurse registration. The group formulated plans to improve nursing curriculum and hospital administration in the first concerted attempt to improve hospitals through a national organization.

Progress in Infection Control

Ignaz Philipp Semmelweis of Vienna, Austria, unknowingly laid the foundation for Louis Pasteur's later work. In 1847, at the Vienna Lying-In Hospital, Europe's largest teaching obstetrical department, he boldly declared that the alarming number of deaths from puerperal fever was a result of infection transmitted by students who came directly from the dissecting room to take care of maternity patients. Semmelweis noted that Division 1 of the hospital was a medical student-teaching service and Division 2 was used for midwife trainees. Maternal deaths for Division 1 averaged 10%, whereas the rate for Division 2 averaged 3%. Medical students performed autopsies; midwives did not. As a result of these findings, an order was posted on May 15, 1847, requiring all students to scrub their hands in chlorinated lime until the cadaver smell was gone. The order was later revised to include hand washing between patients.

Despite having made bitter enemies, Semmelweis had the satisfaction of seeing the mortality rate in his obstetrical cases drop from 9.92% to 1.27% in little more than a year as a result of an aseptic technique that he devised. A few years later, Louis Pasteur demonstrated the scientific reason for Semmelweis's success when he proved that bacteria were produced by reproduction and not by spontaneous generation, as was then generally believed. From his work came the origin of modern bacteriology and clinical laboratories.

Also of great importance to hospitals and infection control was Ernst von Bergmann's introduction of steam sterilization in 1886 and William Stewart Halsted's introduction of rubber gloves in 1890.

By the end of the century, Joseph Lister carried Pasteur's work a step further and showed that wound healing could be hastened by using antiseptics to destroy disease-bearing

organisms and by preventing contaminated air from coming into contact with these wounds. Lister was not content with obtaining better results in his own surgical cases; he devoted his life to proving that suppuration is dangerous and that it should be prevented or reduced by the use of antiseptics. Despite his successful work and eloquent pleas, his colleagues persisted in following their old methods. Years after his discovery, they continued to deride him and his technique, which consisted of spraying carbolic solution so profusely about the operating room that both surgeons and patients were drenched. As time went on and antiseptics and the techniques of using them improved, even the skeptical were impressed by the clinical results. Surgeons, at last, realized that they could undertake major operations with less fear of morbidity and mortality.

The Continuing Problem

Unfortunately, infections continue to be a major concern in the home and healthcare setting. In light of an excerpt from the article, "99,000 Die Yearly From Preventable Hospital Infections, CDC Finally Gets Data as State Laws Force Hospitals to Count Infections," organizations must ask themselves, have we learned anything from the history of hospitals, and how much progress have we really made?⁷

In a special issue of *Emerging Infectious Diseases*, Dr. William R. Jarvis, Associate Director for Program Development, Division of Health Care Quality Promotion (currently Hospital Infections Program), Centers for Disease Control and Prevention (CDC), writes:

Over the past two decades, acute-care facilities have become smaller and fewer, but the hospitalized patient population has become more severely ill and more immunocompromised and thus at greater risk for hospital-acquired infections. At the same time, the proportion of the U.S. population 65 years of age has increased, as have the number of long-term care facilities and the number of beds in these facilities. This trend is expected to continue for the next 50 years. Similarly, delivery of health care in the home has become the most rapidly growing sector of the health-care system. Currently, nearly as many patients are receiving care in the home as in the inpatient setting. Provision of health care in managed-care and outpatient and ambulatory-care settings continues to expand. Thus, the spectrum of health-care delivery in 2000 is larger than ever before. Because of the severely ill and immunocompromised populations in these settings, prevention of infections and other adverse events is a major component of providing quality care. . . .

Infection control personnel will need to expand their efforts to match the expansion of the health-care delivery system. Enhanced administrative support for programs to prevent infections and medical errors will be needed if we are to reduce the risk of infection and other adverse events and improve the quality of care in the entire spectrum of health-care delivery. Now, instead of the acute-care facility being the center of the infection control universe, the infection control department has become the center of the diverse health-care delivery system. Infection control departments will need to expand their surveillance of infections and adverse events and their prevention efforts to all settings in which health care is delivered.⁸

Discovery of Anesthesia

As the 19th century neared its close, surgery was becoming more frequent. The discovery of anesthesia and the principle of antiseptics are to be regarded as two of the most significant influences in the development of surgical procedures and the modern hospital. Anesthesia improved pain control, and improved hygiene practices helped reduce the incidence of surgical site infections.

Modern Hospital Laboratory

The study of cytology originated around the middle of the 19th century and influenced the development of the modern hospital clinical laboratory. The cell theory was first advanced in 1839 by the German anatomist Theodor Schwann and was further developed by Jacob Henle, whose writings on microscopic anatomy appeared in 1850. Rudolf Virchow was the most eminent proponent of the cell theory. His studies in cellular pathology speeded research in the etiology of disease.

Changing Hospital Structure

With nursing, anesthesia, infection control, and cytology under way, a change in hospital structure began in the last quarter of the 19th century. Buildings of the Civil War days were still in use, with as many as 25 to 50 beds in a ward and little provision for segregation of patients. In New York City in 1871, construction of Roosevelt Hospital, which was built on the lines of a one-story pavilion with small wards, set the style for a new type of architecture that came to be known as the American plan. A noteworthy feature was ventilation by means of openings in the roof, a definite improvement on earlier hospitals that were characterized by a lack of provision for

ventilation. Dr. W. G. Wylie, writing in 1877, said he favored this type of building, but he advocated that it be a temporary structure only, to be destroyed when it became infected.

Changing Hospital Function

Promoted by the wealth of bacteriologic discoveries, hospitals began to care for patients with communicable diseases. During the decade from 1880 to 1890, the tubercle bacillus was discovered, Pasteur vaccinated against anthrax, Koch isolated the cholera bacillus, diphtheria was first treated with antitoxin, the tetanus bacillus and the parasite of malarial fever were isolated, and inoculation for rabies was successful. Treatment of patients with some of these infections necessitated isolation, and hospitals were the logical place for observation of communicable diseases. Consequently, at the end of the century, in addition to their many surgical cases, hospitals were crowded with large numbers of patients suffering from scarlet fever, diphtheria, typhoid, and smallpox.

Discovery of the X-Ray

Wilhelm Conrad Röntgen's discovery of the X-ray in 1895 was a major scientific achievement. The first use of the X-ray symbolizes the beginning of the period that necessitated equipment so costly that the average practitioner could not afford to install it. The natural result was the founding of community hospitals in which physicians could jointly use such equipment. Nineteenth century inventions also included the clinical thermometer, the laryngoscope, the Hermann von Helmholtz ophthalmoscope, and innumerable other aids that have led to more accurate diagnoses.

Although the medical and nursing professions of the later half of the 19th century did not reap the full reward of their discoveries, they provided the 20th century with a firm foundation upon which to build.

20TH CENTURY PROGRESS

The treatment of metabolic diseases and nutritional deficiencies, the importance of vitamins, and the therapy of glandular extracts played an important role in the advancement of medicine in the 20th century. As early as 1906, Frederick Gowland Hopkins began investigations into vitamins. Two years later, Carlos Finlay produced experimental rickets by means of a vitamin-deficient diet. This, in turn, was followed by Kurt Huldschinsky's discovery that rickets could be treated successfully with ultraviolet light. In quick succession came Casimir Funk's work with vitamins, Elmer McCollum's discovery of vitamins A and B, Joseph Goldberger's work in the