History and Trends of Health Care

4000 BC – 3000 BC Primitive Times
- Illness and diseases were a punishment from the Gods
- Tribal witch doctors treated illness with ceremonies
- Herbs and plants used as medicines (morphine and digitalis)
- Trepanation or trephining to create a hole in the skull
- Average life span 20 years

3000 BC – 300 BC Ancient Egyptians
- Physicians were priests
- Bloodletting or leeches used as medical treatment
- Average life span 20 years

1700 BC – AD 220 Ancient Chinese
- Believed in the need to treat the whole body by curing the spirit and nourishing the body
- Recorded a pharmacopoeia of medications based mainly on the use of herbs
- Used therapies such as acupuncture
- Began to search for medical reasons for illness
- Average life span was 20-30 years

1200 BC –200 BC Ancient Greeks
- First to observe the human body and the effects of disease – led to modern medical sciences.
- Believed illness is a result of natural causes
- Used therapies such as massage, art therapy, and herbal treatment
- Average life span 25-35 years

753 BC – AD 410 Ancient Romans
- Established first hospital (caring for solders in their homes)
- First public health and sanitation systems by building sewers and aqueducts
- Average life span 25-35 years

AD 400 – AD 800 Dark Ages
- Began after the fall of the Roman Empire
- Emphasis on saving the soul and study of medicine was prohibited
- Monks and priests treated patients with prayer
- Average life span 20-30 years

AD 800 – AD 1400 Middle Ages
- Renewed interest in medical practices of Greek and Romans
- Bubonic Plague killed 75% of population in Europe and Asia
- Average life span 20-35 years

AD 1350 – AD 1650 Renaissance
- Dissection of body led to increased understanding of anatomy and physiology
- Invention of printing press allowed medical knowledge to be shared
- Average life span 30-40 years

16th and 17th Centuries
- Cause of disease still not known – many people died from infections
- Invention of the microscope allowed physicians to see disease-causing organisms.
- Apothecaries led to development of pharmacies
- First vaccination developed – smallpox
- Average life span 35-45 years

18th Century
- Gabriel Fahrenheit (1686-1736) created the first mercury thermometer
- John Hunter (1728-1793), established scientific surgical procedures and introduced tube feeding
- Benjamin Franklin invented bifocals
- Average life span 40-50 years

19th Century
- Formal training for nurses began
Infection control developed once microorganisms were associated with disease.
Viruses discovered in 1892.
Women became active participants in health care.
Average life span 40-60 years.

20th Century
- Increased knowledge about the role of blood in the body.
- ABO blood groups discovered.
- Found out how white blood cells protect against disease.
- New medications were developed:
  - Insulin discovered and used to treat diabetes.
  - Antibiotics developed to fight infections.
  - Vaccines were developed.
- New machines developed:
  - Kidney Dialysis Machine.
  - Heart Lung Machine.
  - Surgical and diagnostic techniques developed to cure once fatal conditions.
- Organ Transplants.
- Test tube babies.
- Implanted first artificial heart.
- Health Care Plans developed to help pay the cost of care.
- Medicare and Medicaid marked the entry of the federal government into the health care arena.
- HMOs provided an alternative to private insurance.
- Hospice organized.

21st Century
- The first totally implantable artificial heart was placed in a patient in Louisville, Ky. In 2001.
- The threat of bioterrorism lead to smallpox vaccination of the military and first responders in 2002.
- The Netherlands became the first country in the world to legalize euthanasia in 2002.
- The Human Genome Project to identify all of the approximately 20,000 to 25,000 genes in the human.
- Stem cells were used in the treatments of disease early in the 2000’s and lead to increased research in the treatment of cancer and other diseases.
- President George W. Bush approved federal funding for research using only existing lines of embryonic stem cells in 2001.
- Advanced Cell Technology announced it cloned a human embryo in 2001 but the embryo did not survive.
- The U.S. FDA approved the use of the abortion pill RU-486 IN 200
- The standards for Privacy of Individually Identifiable Health Information, required under the Health Insurance Portability and Accountability Act (HIPPA) of 1996, went into effect in 2003.
- The Medicare Prescription Drug Improvement and Modernization Act was passed in 2003.
- Vaccinations for cervical cancer and herpes zoster (shingles) in 2006.

Potential for 21st Century
- Cures for AIDS, cancer, and heart disease.
- Genetic manipulation to prevent inherited disease.
- Nerves in the brain and spinal cord are regenerated to prevent paralysis.
- Antibiotics are developed that do not allow pathogens to develop resistance.
- Average life span 90-100 years.

Individuals who made historical contributions to health care.

Hippocrates (c. 460 – 377 BC)
- Greek physician known as the “Father of Medicine.”
• Authored code of conduct for doctors known as the “Hippocratic Oath” that is the basis of medical practice today
• Believed illness was not caused by evil spirits and stressed importance of good diet, fresh air, cleanliness, and exercise

Anton van Leeuwenhoek (1632-1723)
• Invented the microscope lens that allowed visualization of organisms
• Scraped his teeth and observed the bacteria that causes tooth decay

Benjamin Franklin (1706-1790)
• Invented bifocals
• Found that colds could be passed from person to person

Ephraim McDowell (1771 -1830)
• Surgeon from Danville, Ky.
• Performed the first ovariotomy -(surgical removal of the ovary) - to remove a 22 pound tumor

Edward Jenner (1749-1823)
• Developed a vaccination for smallpox in 1796

Rene Laennec (1781-1826)
1. Invented the stethoscope in 1819
2. First stethoscope was made of wood

Elizabeth Blackwell (1821-1910)
• First female physician in the United States in 1849

Florence Nightingale (1820-1910)
• Known as the “Founder of Modern Nursing”
• Established efficient and sanitary nursing units during the Crimean War in 1854
• Invented the call bell system and use of dumbwaiters to deliver meals
• Begin the professional education of nurses

Louis Pasteur (1822-1895)
• Known as the “Father of Microbiology”
• His germ theory proved that microorganisms cause disease
• Proved that heat can be used to destroy germs through a process called pasteurization
• Created a vaccine for rabies in 1885
• Founded the basic rules for sterilization

Joseph Lister (1827-1912)
• Used carbolic acid on wounds to kill germs
• First doctor to use an antiseptic during surgery

Clara Barton (1821-1912)
• Volunteer nurse for wounded soldiers during the Civil War
• After Civil War, established a bureau of records to search for missing men
• Campaigned for the USA to sign the Treaty of Geneva, which provided relief for sick and wounded soldiers
• Formed American Red Cross in 1881 and served as its first president

Robert Koch (1843-1910)
• Developed the culture plate method to identify pathogens
• Isolated the bacterium that causes tuberculosis

Wilhelm Roentgen (1845-1923)
• Discovered roentgenograms (X-rays) in 1895
• Let doctors see inside the body
• X-rayed wife’s hand

Sigmund Freud (1836-1939)
• Discovered the conscious and unconscious part of the mind
• His studies were the basis for psychology and psychiatry

Sir Alexander Fleming (1881-1955)
• Discovered penicillin in 1928 which is considered one of the most important discoveries of the twentieth century

Jonas Salk (1914-1995) and Albert Sabin (1906 – 1993)
• Discovered polio vaccine
• Saved many people from this virus that paralyzed thousands of adults and children each year.

Francis Crick and James Watson
• Described the structure of DNA and how it carries genetic information in 1953
• Built a three-dimensional model of the molecules of DNA
• Shared the Noble Prize in 1962

Christian Barnard
• Performed first successful heart transplant in 1968

Robert Jarvik
• Creator of the first artificial heart
• On December 2, 1982, it was implanted into Barney Clark, who lived for the next 112 days
• The second patient, William Schroeder, lived for 620 days

Ben Carson
• Famous for his surgeries to separate Siamese twins
• Currently Director of Pediatric Neurosurgery at John Hopkins
• He has refined hemispherectomy, a surgery on the brain to stop seizures