

## 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 soldiers 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

### 16<sup>th</sup> and 17<sup>th</sup> 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

### 18<sup>th</sup> 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

### 19<sup>th</sup> 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

### **20<sup>th</sup> 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

### **21<sup>st</sup> 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 2000
- 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 21<sup>st</sup> 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 -1 1830)**

- Surgeon from Danville, Ky.
- Performed the first ovariectomy -(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