The History of Health Care

4000 BC – 3000 BC
Primitive Times

• In Ancient times it was believed that:
  – Illness/disease caused by supernatural spirits and demons
  – Tribal witch doctors treated illness with ceremonies to exorcise evil spirits

• Herbs and plants were used as medicine
  – **Morphine** from opium poppy
    • relieves severe pain
  – **Digitalis** from foxglove plants
    • Then, leaves were chewed to strengthen & slow heart
    • Now, administered by pills, IV, or injections
  – **Quinine** from bark of cinchona tree
    • Controls fever and muscle spasms
    • Used to treat malaria
  – **Belladonna** and **atropine** from poisonous nightshade plant
    • relieves muscle spasms especially GI pain

3000 BC – 300 BC
Ancient Egyptians

• Earliest people to keep accurate health records
• Superstitious-Called upon gods to heal them when sick
• Believed demons caused disease

4000 BC – 3000 BC
Primitive Times

• Trepanation or trephining (boring a hole in the skull) was used to treat insanity, epilepsy and headache
• Average life span was **20 years**
3000 BC – 300 BC
Ancient Egyptians

• Physicians were the Priests
  – Studied medicine and surgery in Temple medical schools
  – Imhotep (2725 BC) may have been the first physician

• Believed the body was a system of channels for air, tears, blood, urine
  • Bloodletting or leeches used as medical treatment to “open” the channels if they became “clogged”

3000 BC – 300 BC
Ancient Egyptians

• Magicians were also healers
  • Magic and medicinal plants used to treat disease
  • Prescriptions were written on papyrus
  • Identified certain diseases
  • Pharaohs kept many specialists (Dr.’s)

• Eye of Horus
  – Magic eye: amulet to guard against disease, suffering, and evil
  – History: Horus lost vision in attack by Seth; mother (Isis) called on Egyptian God Thoth for help; eye restored
  – Evolved into modern day Rx sign

3000 BC – 300 BC
Ancient Egyptians

• Embalming
  – Science of preserving human remains
  – Egyptians did this with Mummies
  – Advanced the knowledge of anatomy
  – Strong antiseptics used to prevent decay
  – Gauze similar to today’s surgical gauze

• Research on mummies has revealed the existence of modern day diseases
  – Arthritis
  – Kidney stones
  – Arteriosclerosis
3000 BC – 300 BC
Ancient Egyptians
• Some medical practices still used today
  – Circumcision
  – Closing wounds
  – Setting fractures
• Average life span was 20-30 years

1700 BC – AD 220
Ancient Chinese
• Believed in the need to treat the whole body by curing the spirit and nourishing the body
• Religious restrictions against dissection resulted in inadequate knowledge of body structure
• Recorded herbal medications

1700 BC – AD 220
Ancient Chinese
• 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 and not superstitions
• Used therapies such as massage, art therapy, and herbal treatment

1200 BC –200 BC
Ancient Greeks
• Stressed diet and exercise as ways to prevent disease
• Research helped eliminate superstitions
• Uns sanitary practices were associated with the spread of disease

Hippocrates 460-377 BC
• Called the Father of Medicine
• Organized diseases by signs and symptoms
  • Sign: objective patient observation
  • Symptom: subjective patient observation
• Created a high standard of ethics used by physicians
  • Hippocratic Oath
1200 BC – 200 BC
Ancient Greeks
• Aesculapius
  – staff and serpent symbol of medicine
  – temples built in his honor because the first true clinics and hospitals
  – Average life span was 25-35 years

Think about it:
In history class you learned (or will learn) that the Romans were known for building roads and impressive buildings, and for fighting wars. How do those facts relate to the Romans’ contributions to medicine?

753 BC – AD 410
Ancient Romans
• First to organize medical care by providing care for injured soldiers
• Hospitals developed when physicians cared for the ill people in rooms in their homes

753 BC – AD 410
Ancient Romans
• Began public health and sanitation systems
  – Aqueducts to carry clean water to the cities
  – Sewers to carry away waste materials away from the cities
  – Public baths with filtering to prevent disease

753 BC – AD 410
Ancient Romans
• Public hygiene
  – flood control
  – solid construction of homes
• Disease prevention
  – Diet, exercise, medications
• Life span was 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
• Prayer and divine intervention were used to treat illness & disease
• Life and death was in the hands of God
• Monks and priests provided custodial care for sick people in convents and monasteries
• Medications were mainly herbal mixtures
• Average life span was 20-30 years
AD 800 – AD 1400
Middle Ages
- Renewed interest in medical practices of Greek and Romans
- Physicians began to obtain knowledge in medical universities
- Pandemic of the Bubonic Plague (Black Death) killed 75% of population in Europe and Asia

AD 800 – AD 1400
Middle Ages
- Major diseases included smallpox, diphtheria, tuberculosis, typhoid, the plague, malaria, syphilis, measles, and tuberculosis
- Arab physician (Rhazes) began the use of animal gut for suture material.
- Arabs began requiring physicians pass examinations and obtain licenses

AD 800 – AD 1400
Middle Ages
- Crusaders spread disease
- Cities became common
- Special officers to deal with sanitary problems
- Realization that diseases are contagious
- Quarantine laws passed
- Average life span was 20-35 years

AD 1350 – AD 1650
Renaissance
- Rebirth of the science of medicine
- Dissection of body led to increased understanding of anatomy and physiology
- Invention of printing press allowed medical knowledge to be shared
- First anatomy book was published by Andreas Vesalius (1514-1564)
- Cause of disease still not known

AD 1350 – AD 1650
Renaissance
Leonardo da Vinci
and
Michaelsangelo
used dissection to draw the human body more realistically
- Average life span was 30-40 years

16th & 17th Centuries
- Knowledge of human body greatly increased.
- Invention of the microscope allowed physicians to see disease-causing organisms.
- Apothecaries (early pharmacists) made, prescribed, and sold medications
- Circulation pattern of blood was noted.
- Use of ligatures to stop bleeding
- Smallpox vaccine discovered
- Average life span 40-50 years
18th Century

- Gabriel Fahrenheit created the first mercury thermometer
- John Hunter established scientific surgical procedures, introduced tube feeding
- Edward Jenner developed the smallpox vaccination
- Joseph Priestly discovered the element oxygen

19th Century

- Industrial Revolution
  - Development of machines
  - Major progress in medical science - discoveries of microorganisms, anesthesia, and vaccinations
- Louis Pasteur discovered that microorganisms cause disease
- Infection control (hand washing) developed once microorganisms were associated with disease
- Formal training for nurses began
- Women became active participants in health care

19th Century

- Hospitals were places to die
- Most doctors were general practitioners
- Immunizations are now common
- Antibiotics can cure
- Increased life span, but new health hazards arise like obesity, neurosis, lung cancer, and hypertension
- Increase in medical costs as well

19th Century

- Joseph Lister used carbolic acid on wounds to kill germs and was the first to use antiseptic during surgery
- Robert Koch was considered to be the father of microbiology and identified the germ that causes TB which in the 1880s killed 1 in every 7 people
- Average life span 40-65 years

20th Century

- Rapid growth in health care
- New medications were developed
  - Insulin discovered and used to treat diabetes
  - Antibiotics developed to fight infections
- Vaccines were developed
- New machines developed
  - X-ray machines
  - Kidney Dialysis Machine
  - Heart Lung Machine
- Surgical and diagnostic techniques developed to cure once fatal conditions

20th Century

- ABO blood groups discovered
- Found out how white blood cells protect against disease
- Structure of DNA and research in gene therapy (ongoing today)
- First open-heart surgery in 1950s
- Implanted first artificial heart
- Organ Transplants
- Test tube babies
- Computer technology in every aspect of health care
20th Century

- 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

20th Century

- Artificial parts, Bioengineering, Bioethical issues
- AIDS, Drug resistant organisms
- Laser surgeries, Laparoscopic surgeries
- Unlimited possibilities for medical science in the future
- Average life span of 60 to 80 years

21st Century

- The Human Genome Project to identify all of the approximately 20,000 to 25,000 genes in the human
- Embryonic 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
- The threat of bioterrorism with the use of biologic agents as weapons
- Viruses that can cause pandemics

21st Century

- 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

Individual Contributions
Hippocrates  (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

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

Rene Laennec  (1781-1826)
• Invented the stethoscope in 1819
• 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
- Began 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

Gregory Mendel (1822-1884)
- Established principles of heredity
- Dominant/Recessive Patterns
- Father of Genetics

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 (1916 – 2004) and James Watson (1928 -)
- 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 (1922 – 2001)
- 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 (1951 - )
- Famous for his surgeries to separate Siamese twins
- Currently Director of Pediatric Neurosurgery at Johns Hopkins
- He has refined hemispherectomy, a surgery on the brain to stop seizures

Cost Containment
- **Goal**: Control rising cost of health care and achieve maximum benefit for every dollar spent
- Cost of health care began rising due to:
  - Technological advances
  - Aging population
  - Health-related lawsuits
- **Cost Containment measures include**:
  - Diagnostic related groups (DRG): places cost limits on procedures
  - Combination of services: HMOs, PPOs
  - Outpatient services: reduces need for hospital stay
  - Mass or bulk purchasing
  - Early intervention and preventive services
  - Energy Conservation

1:2
Current Trends in Health Care

Home Health Care
- Industry grew rapidly when DRGs were initiated
- Services provided in a patient’s home
- Trend is a return to home care of earlier years
- Form of cost containment

Geriatric Care
- Care for the elderly
- Percentage of elderly population growing rapidly
- Baby boomers entering geriatric age
- Need for more and different types of facilities

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OBRA
- Omnibus Budget Reconciliation Act (OBRA) of 1987
- Federal regulation for long-term care and home health care
- States must establish training and competency evaluation programs for nursing/geriatric assistants
- States must maintain a registry of qualified individuals
- Requires compliance with patients’ and residents’ rights
- States must establish guidelines so that these rights are observed/enforced

Telemedicine
- Use of video, audio, and computers to provide medical/health care services
- Decreases need for medical center visits
- Decreases need for home health visits
- Telemedicine will be important to health care delivery in the future

Wellness
- State of optimum health
- Balance between physical, social, and mental health
- Focus on disease prevention and quality of life
  - Saves costs
- Exercise, nutrition, weight control, and healthy living habits

Wellness (continued)
- Physical wellness (diet, exercise, preventative care)
- Emotional wellness (understanding personal feelings, coping with stress)
- Social wellness (showing concern, tolerance, affection, respect for others)
- Mental and intellectual wellness (being creative, curious, open-minded, continual learning)
- Spiritual Wellness (using values, ethics and morals)

Wellness (continued)
- Holistic health care
  - Treats the whole body, mind, and spirit
  - Each person is unique and has different needs
  - Uses many methods to diagnose and treatment
  - Emphasis on protection and restoration
  - Promotes body’s natural healing powers
  - Health care worker respects patient choice

Complementary and Alternative Methods of Health Care
- Complementary therapies: used in conjunction with conventional therapies
- Alternative therapies: used in place of biomedical therapies
- Integrative health care: uses mainstream and CAM therapies in treatment
Complementary and Alternative Methods of Health Care (continued)

- Holistic approach
  - Belief that effect on one part effects whole person
- Based on belief that the person has a life force or energy that can be used in the healing process
- May vary by cultural values or beliefs

Types of CAM Practitioners
- Ayurvedic (based on the belief that health and wellness depend on a delicate balance between the mind, body, and spirit)
- Chinese medicine practitioners (life energy—Chi—flows through every living person)
- Chiropractors (adjustments to restore flow of energy from brain to body parts through nerves)
- Homeopaths (body can heal itself, use plants and minerals to stimulate the immune response)
- Hypnotists (receptive to verbal suggestions when in a trance-like state)
- Naturopaths (only natural therapies like fasting, special diets, lifestyle changes—no medicine or surgery)

Types of Therapies
- Refer to Table 1-8 in Text
- Most are noninvasive and holistic
- Often less expensive than traditional treatments
- National Center for Complementary and Alternative Medicine established in 1992

Pandemic
- Disease outbreak over a wide geographic area affecting high proportion of population
- WHO concern about influenza pandemics
  - H5N1: avian flu
  - H1N1: swine flu
- Viruses can mutate and exchange genetic information

Pandemic (continued)
- Government plans
  - Education
  - Vaccine production
  - Antiviral drugs
  - Developing protective public health measures
  - International cooperation

Conclusion
- Health care has changed and will continue to change
- Workers must be constantly aware of changes that occur
- Workers must make every attempt to learn about trends
LSC2  Change this to “Idea that health of one body part affects overall health”?
Leslie Connor, 7/22/2013