# Unit Two - Law and Order
## Health Care Systems - Lecture Notes

### History of Health Care

• Hippocrates – 400 BC
• Native Americans – herbal therapy
• Various beliefs:
  – Credited health & illness to moods of Gods
  – Others used reason to attempt to explain diseases
  – Religion – Greek temple of healing
  – Ancient peoples even performed surgery
• Manuscripts and books were hand copied as medical knowledge increased
• Middle Ages (500 – 1500 AD)
  – Reason began to replace people's beliefs in spiritual or superstitious causes for disease
  – Doctors began to keep careful notes
  – Development of medicine as a science
  – Regulation of medical care – licensing, formal training (no women)
  – Religious hospitals
• Barber – Surgeon
  – Middle Ages
  – Cut hair, treat cataracts, practice blood-letting, treat injuries, amputate limbs, cauterized bleeds
  – Stripped pole – after operation, bandages, hung on staff/pole and placed outside as an advertisement.  Twirled by the wind, they would form red/white spiral patterns.
• Renaissance (1300 – 1600 AD)
  – Scientific Method came into use
    · Process used to acquire new knowledge instead of guessing or supernatural
    · Based on observation, taking careful notes
  – Microscope invented
  – Study of human anatomy
• Industrial Revolution (1700 – 1800 AD)
  – Introduction of machines
  – Blood carried through body by vessels, discovery of capillaries
  – Stethoscope invented
  – Connection between health & environment
  – Vaccinations
  – Sterilization of equipment to avoid infection (medical asepsis)
  – Discovery of pathogens, anesthesia
• Modern times (1900 – present)
  – Hospitals were places for people to go to die

- – Advances in engineering, chemistry, physics
- – Antibiotics & other medications invented
- – X-rays
- – Organ transplants, artificial organs
- – In vitro fertilization
- – Research, technology, and computers

## The Caduceus

- Greek God of Healing – Asclepius
- His symbol was the snake
- Priest healers later adopted the symbol and has now become the symbol for physicians
- Angel of healing

## Medical Milestones

- 1518 – College of Physicians is established in London.
- 1628 – William Harvey describes the circulation of blood.
- 1816 – Rene Laennec invents the stethoscope.
- 1839 – First dental school founded in Baltimore.
- 1842 – Crawford Lang develops ether anesthesia.
- 1869 – Gregor Mendel develops the laws of heredity.
- 1893 – Aspirin is developed.
- 1910 – Marie Curie isolates radium, later used to treat cancer.
- 1922 – Frederick Banting treats diabetes with insulin.
- 1928 – Sir Alexander Fleming discovers penicillin.
- 1944 – First kidney dialysis machine.
- 1953 – First heart-lung machine is used for successful open-heart surgery.
- 1953 – First successful kidney transplant performed.
- 1963 – First human liver transplantation.
- 1964 – First human lung transplantation.
- 1967 – Christian Barnard performs the first successful heart transplantation.
- 1967 – First hospice founded in England.
- 1969 – Denton Cooley implants the first temporary artificial heart.
- 1972 – CT scan introduced.
- 1975 – Lyme disease reported for first time.
- 1978 – First test tube baby born in England.
- 1981 – AIDS is identified as a disease.
- 1981 – First successful surgery on a fetus.
- 1998 – Stem cells isolated from fetal tissues.
- 2000 -  Human genome mapping project is completed.

## Pioneers in Medicine

• Without medical pioneers, there would be no medical advances, no technology evolution, no progress at all.
• The theories or conclusions of the medical pioneers aren't always popular.
  – New and different ideas are often met with hostility, distrust, and contempt.
  – Medical pioneers often deal with opposition and conflict, but they move forward with determination.
• We literally owe our lives to those that make the tough decisions affecting the medical field and medical practices.
• Here are just a few:
  – Alexander Fleming: penicillin.
  – Joseph Lister: aseptic technique in surgery.
  – Jane Addams: first social worker in US.
  – Elizabeth Blackwell: First female physician.
  – Clara Barton: Civil war nurse.
  – Anthon van Leeuwenhook: invented microscope.
  – Florence Nightingale: founded modern nursing.
  – Harry Heimlich: Heimlich maneuver.

## Trends in Health Care

• "Explosive" development of technology
  – Non-invasive diagnosis of soft tissue diseases/injuries
  – Ultrasound technology
  – Radiology
  – Cancer treatments
  – Mobile telephones
  – Cameras – scopes
  – Digital imaging
  – VERY EXPENSIVE
• Preventive Medicine – Wellness
  – Link between diet, exercise, & good health
  – Health care wellness centers for patients with chronic diseases (arthritis, diabetes, osteoporosis, etc.)
  – Complimentary therapy, Holistic medicine
  – Disease screenings
  – Helps control costs, encourage positive choices
• Aging Population
  – By 2005, one of every two adults will be 45 years or older
  – Baby Boom (1946 – 1964)
  – The elderly require more
  health services
• Underinsured & Uninsured
  – 16% (42 million) of US population do not have health insurance

- – Many citizens have health insurance but the coverage is limited or the co-payments or deductibles are very high
- – 74% of the uninsured are in families with at least 1 full-time worker
- – Among low-wage workers (<$7/hr), 45% are not even offered medical benefits
- – County hospitals, tax-supported hospitals
- – Cost absorption
- – Lack of care
- – Underinsured – small companies have greater overhead costs for providing insurance and generally only offer a "one-size-fits-all" medical plan to employees
• Ambulatory/Outpatient Surgery
- – Many procedures, from diagnosis to treatment can now be done without overnight hospitalization
- – Technology, research, new medications
- – Influenced by limits on insurance reimbursements (DRG's)
- – Overall cost of procedures is reduced

• DRG's - Diagnostic Related Groups
- – Groups of procedures or tests related to a specific diagnosis
- – Now a flat fee is paid based upon the diagnosis regardless of how long the patient stays or the services provided
• Home Health Care
- – Common during late 1980's
- – Nurse or other skilled professional visits the home to assess patient's condition and provide treatments and education
- – Families and patients have to learn how to self-administer treatments or perform procedures done in the hospital in the past
- – Health care workers evolved to become teachers and coaches
- – Benefits:
  - • Exposed to fewer pathogens and germs
  - • Reduced stress/anxiety in familiar surroundings
  - • Lesser skilled workers can assist with personal activities leaving skilled workers to provide assessment, treatment & education – decreases costs

## Health Care Facilities
• Places that provide care or make it possible for some type of care to be delivered to patients
• Hospitals
- – Religious
- – Private (generally for profit)
- – Nonprofit – any profit returned to the institution to pay for updates, expansion
- – Government  - funded by taxes (Military, Veterans)
- – Specialized – specialize in groups of patients or specific diseases/treatments (cancer, children, etc.)

• Long-Term Care
   – Provide nursing or other professional health care services on a regular basis
   – Patients may not be safe to live alone or may have needs their family cannot meet
   – Generally see doctors on a monthly basis
   – Private, non-profit, state/federally funded
• Assisted-Living Center
• Skilled Nursing Facilities
• Private Offices
   – Individual and group practices
• Clinics
   – Share office and support staff but have their own patients
   – May specialize or combine different specialties – medical care plus allied health care
   – Mobile clinics
• Laboratories
   – Specimen testing
   – May be part of a hospital or independent
• Emergency Medical Services
   – Provide care to ill and injured people as quickly as possible
   – Moving out in to the communities (ex: Instacare, etc)
• Hospice
   – Multidisciplinary care for patients who have a terminal illness – generally fewer than six months to live
   – Focuses on the ill person  & family, not the disease
   – Goal is to reduce pain and other symptoms and provide emotional support
   – Generally provided in patient's home
   – Hospice centers are available

## Health Care Agencies

• Government Agencies
   – Mainly conduct research, oversee programs and establish health care policies
   – Examples
      · National Institutes of Health
      · U.S. Department of Health & Human Services
      · World Health Organization
      · Local Health Departments
      · Center for Disease Control & Prevention
      · Food & Drug Administration

## Local Health Departments

• Provide immunizations, inspect restaurants, oversee protection of the environment
• Collect statistics about communicable diseases
• Health education, community health-related services

## U.S. Dept of Health & Human Services (DHHS)

• President appoints Secretary of Health & Human Services – advises on matters of health and welfare
• Provide services to needy children & families, at-home services to elderly
• Reduce medical errors & costs, and improve quality of health care

## Centers for Disease Control & Prevention (CDC)

• Agency of DHHS
• Monitors and prevents the outbreak of diseases
• International disease transmission, national health statistics, research
• Ensure health and safety of the nation

## Food & Drug Administration (FDA)

• Agency of DHHS
• Ensure the safety of foods and cosmetics, and the safety and usefulness of medications and medical devices

## National Institutes of Health (NIH)

• Agency of DHHS
• World's premier medical research organization
• Cancer, Alzheimer's, diabetes, arthritis, heart disease, and AIDS

## World Health Organization (WHO)

• International agency sponsored by the United Nations
• Directing & coordinating authority on international health
• Goal is to help all people attain the highest possible levels of health
• International health statistics

## Volunteer & Non-Profit Health Agencies

• Supported by private contributions & fund-raising
• Most deal with a specific disease or group of diseases
• Provide funding for research and promote education
• May also provide services to patients
• Great influence on laws & standards
• Examples:
    – American Lung Association
    – March of Dimes
    – American Heart Association

## Current World Health Issues
• AIDS/HIV
• Tuberculosis
• Severe Acute Respiratory Syndrome (SARS)
• Tobacco control
• Traveler's health
• Polio
• Maternal health
• Road Safety

## Utah Health Issues
• Influenza & "Ask For A Mask"
• Affordable prescriptions
• Children's health insurance
• Smoking cessation programs
• Student injuries at school
• Diabetes
• Maternal & infant health

## National Health Care
• The U.S. health care system is a mix of public and private programs with many people falling between the cracks.
• There are enormous gaps in the insurance coverage available and level of benefits to people of similar circumstances.
• Is health care a right or a privilege?
• We assure a free, public education to all children – how about affordable access to at least basic health care?
• Canada ,United Kingdom, Singapore guarantee all citizens universal health care – "medically necessary" services.
• Health care services are available on the basis of need, not on the ability to pay for services.
• Canada - Pros
  – 30 million citizens (comparable to California).
  – Patient goes to physician of choice; no deductibles, co-payments, limits, or forms.
  – *80 billion spent annually and 70% is publicly funded – no private insurance.
  – Providers/facilities receive global operating budgets.
  – No public awareness of actual costs.
• Canada – Cons
  – No limits on demand, patients seek as much health care as desired.
  – No physician pay raises since 1993.
  – Sharp decline in quality of services.
  – Huge wait time for specialist care.

    · <u>Heart bypass = 18.2 week wait.</u>
    · <u>Gynecologist = 11.6 week wait.</u>
    · <u>Orthopedic Surgery = 20.7 week wait.</u>
    · <u>General Surgery = 7.1 week wait.</u>
  – Rationing of care.
- Is national health care the answer?
- Other options?
  – Medical savings account.
  – Soft mandate that if you don't take advantage of available insurance you lose tax benefits and other government entitlements.
  – "Pooling" to decrease insurance premiums and overhead.
  – Sponsor "creative federalism" – experiment with strategies for providing health care.

## Federal Initiatives – Pres. Bush

- Health Care Initiatives
  – Health Savings Accounts
     · <u>Out of pocket medical expenses, premiums during unemployment.</u>
     · <u>Earn tax-free interest, rolled over year to year.</u>
     · <u>$2600/individual, $5150/family.</u>
  – Health Care Tax Credit
     · <u>Tax credit to individuals without access to employer-based coverage.</u>
     · <u>$1000/individual, $3000/family.</u>
- Association Health Plans (AHPs)
  – Allow individuals and groups to purchase health insurance from an association of which they are a member.
  – Leverage volume through membership, similar to how large employers operate their health benefits programs.
  – Goal is to offer small employers an alternative to costly insurance programs.
- Medical Malpractice Reform
  – The lawsuit crisis in many states has little or nothing to do with increases in bad medical practices, but often results from exotic theories of legal liability, runaway juries, and absurd state tort rulings.
  – Congress should strongly encourage states to reform their destructive medical malpractice system in ways that are consistent with the Constitutional principle of federalism.
- Medicare
  – New Medicare law: Provision of a drug discount card, help for low income seniors, and an improvement of private plan competition.
  – The coming Medicare crisis: Explosion of Medicare costs and un-funded liabilities, loss of retiree drug coverage  (7 years).

### Future of Health Care

• The two areas of advancement that will have the greatest impact on the future of health care are:

– Digital Technology

– Genetics

• Digital Technologies

– Diagnostics/Imaging.

– Remote medical care.

– Even shorter hospital stays.

· Home monitoring.

– Robotic medicine.

– Injectable chips and computers.

· Remote control by thought alone.

· Restore hearing, sight.

· Movement for paralyzed.

• Genetics

– Most illnesses are influenced by our genes.

– Predicting disease & response to meds.

– New vaccines.

– Human cloning, stem cells for replacement tissues.

– Universal code of life.

· Mix & match – scorpion into cabbage, etc.

– Designer babies.

• Get ready for the biggest shift in values as people ask profound questions about the meaning of life.

– We are more than just complex machines.

– Emphasis on quality of life.

– Emphasis on the unique value of every person.