The History of Health Care

Course
Principles of Health Science

Unit I*:*
Health Care Systems & History of Health Care

Essential Question
How has past events/people affected modern medicine?

TEKS
130.202(c)(1)(M)

Prior Student Learning
The student should be able to recall noteworthy people who have shaped and contributed to the medical field.

Estimated time
3 hours

Rationale
Historical facts and events are significant in understanding the health care industry.

Objectives
Upon completion of this lesson, the student will be able to:

- Survey and research the historical significance of health care
- Identify key events in the history of health care;
- Recognize people in history who have impacted the health care industry and their contributions to it

Engage
Print photos or display photos of the following people with their names printed at the bottom of the photo. Try to get the students to take an educated guess as to what this person has contributed to medicine. On the back of the photo type up what they actually contributed and read aloud after they have taken time to try and guess. If you are just displaying on your computer have their contributions printed on a sheet of paper or your next slide.

- Gabriel Fallopius: identified the fallopian tubes in females
- Bartolomeo Eustachio: identified the Eustachian tube leading from the ear to the throat
- Gabriel Fahrenheit: created first mercury thermometer
- Joseph Lister: used disinfectants and antiseptics during surgery to prevent infection
- Louis Pasteur: pasteurizing of milk to kill bacteria
- Anton van Leewenhoek: invented the microscope
- Florence Nightengale: founder of modern nursing

Key Points

I. The historical significance of health care provides insight into care of today and the future:
   A. Significant people, places, time periods, and developments in medical history
   B. Impact of disease/epidemics on historical events.
   C. Development of medical education
   D. Development of treatments

(<u>See attached notes</u>)

Activity

I. Investigate the social and political happenings during an assigned time period by completing the **Medical History Group Project**.
II. Present results of investigation through oral group reports that must include visual aids and/or multimedia technology.
III. Develop test questions based on group investigation that may be used as an assessment tool.
IV. Complete the **Healthcare Heroes Project.**

Assessment

Medical and Dental History Questions
Member of a Team Rubric
Multimedia Rubric
Oral Presentation Rubric

Materials

Medical and Dental History Questions Key
School library with history books, biographical books, periodicals, etc.
Badasch, Shirley A./Chesebro, Doreen S., The Health Care Worker, Brady, ISBN 0-89303-478-9
http://www.nlm.nih.gov/hmd/ - National Library of Medicine
http://library.duke.edu/digitalcollections/mma/timeline.html - A timeline of medical discoveries from Duke University Libraries.
Internet

Accommodations for Learning Differences

For reinforcement, the student will create a historical timeline with significant names, dates, and medical events.

For enrichment, the student will predict future technological advances in health care based on historical patterns and create a health care delivery model based on predictions (flowcharts, payment plans, delivery methods, equipment, and procedures).

National and State Education Standards

National Health Science Cluster Standards
HLC01.01 Academic Foundations
Health care workers will know the academic subject matter required (in addition to state high school graduation requirements) for proficiency within their area. They will use this knowledge as needed in their role.

TEKS
130.202 (c)(1)(M) research the historical significance of health care.

Texas College and Career Readiness Standards
English Language Arts
II. A. Locate explicit textual information and draw complex inferences, analyze, and evaluate the information within and across texts of varying

lengths.
II. B. Understand new vocabulary and concepts and use them accurately in reading writing and speaking.
II. C. Describe, analyze, and evaluate information within and across literary and other texts from a variety of cultures and historical periods.
III. B. Develop effective speaking styles for both group and one on one situations.
IV. A. Apply listening skills as an individual and as a member of a group in a variety of settings.
IV. B. 2. Listen actively and effectively in one-on-one communication situations.

Social Studies
I. A. Spatial analysis of physical and cultural processes that shape the human experience.
I.B. Spatial analysis of physical and cultural processes that shape the human experience.
IV.A. Critical examination of texts, images, and other sources of information.
IV.B. Research and methods.

Medical and Dental Class Notes

Ancient Times

- humans had to protect themselves against predators
- superstitious
    - illness/disease caused by supernatural spirits
    - exorcise evil spirits
    - herbs and plants used as medicine
        - digitalis from foxglove plant (today: pill, IV, injection; then: chewed leaves to strengthen and slow heart)
        - quinine from bark of cinchona tree (controls fever, muscle spasms, helps malaria
        - belladonna and atropine from poisonous nightshade plant (relieves muscle spasms especially GI pain)
        - morphine from opium poppy (relieves severe pain)

Egyptians

- earliest to keep accurate health records
- superstitious
- called upon gods
- identified certain diseases
- pharaohs kept many specialists ("Dr.'s)
- priests were the doctors
    - temples were places of worship, medical schools, and hospitals
    - only the priests could read the medical knowledge from the god Thoth
- magicians were also healers
- believed demons caused disease
- prescriptions were written on papyrus
- embalming
    - done by special priests (NOT the doctor priests)
    - advanced the knowledge of anatomy
    - strong antiseptics used to prevent decay
    - gauze similar to today's surgical gauze
    - mummies indicated some modern day diseases
        - arthritis
        - kidney stones
        - arteriosclerosis
- some medical practices still used today
    - enemas
    - circumcision (4000 B.C.): preceded marriage
    - closing wounds
    - setting fractures
- Eye of Horus
    - 5000 years ago
    - magic eye: amulet to guard against disease, suffering, and evil

    - history: Horus lost vision in attack by Seth; mother (Isis) called on Thoth for help; eye restored
    - evolved into modern day Rx sign

Jewish Medicine

- avoided medical practice
- concentrated on health rules concerning food, cleanliness, and quarantine
- Moses: pre-Hippocratic medical thought; studied hygiene and medicine at temple in Egypt; banned quackery (God was the only physician); Day of Rest was the greatest contribution to human welfare

Greek Medicine

- first to study causes of diseases
- research helped eliminate superstitions
- diseases caused by lack of sanitation
- Hippocrates: no dissection, only observations; careful notes of signs/symptoms of diseases; disease not caused by supernatural forces; Father of Medicine; wrote standard of ethics which is the basis for today's medical ethics
- Aesculapius: staff and serpent symbol of medicine; temples built in his honor became the first true clinics and hospitals

Roman Medicine

- learned from the Greeks and developed a sanitation system
- aqueducts and sewers
- public baths
- beginning of public health
- first to organize medical care
- army medicine
- room in doctor's house became first hospital
- public hygiene: flood control, solid construction of homes

Dark Ages (400 – 800 A.D.) and Middle Ages (800 – 1400 A.D.)

- medicine practiced only in convents and monasteries: custodial care, life and death in God's hands
- terrible epidemics
    - bubonic plague (Black Death)
    - smallpox
    - diphtheria
    - syphilis
    - measles
    - typhoid fever
    - tuberculosis
- Crusaders spread disease

- cities became common
- special officers to deal with sanitary problems
- realization of fact that disease is contagious: Quarantine Laws passed

Renaissance Medicine (1350 – 1650 A.D.)

- universities and medical schools for research
- dissection
- book publishing

16th and 17th Century

- Leonardo da Vinci: anatomy of the body
- Anton van Leeuwenhoek (1676): playing with lenses (invented microscope), Observed microorganisms
- William Harvey: circulation of blood
- Gabriele Fallopius: discovered fallopian tube
- Bartolemmo Eustachus: discovered tube from ear to throat
- Some quackery

18th Century

- Edward Jenner: 1796, smallpox vaccination
- Joseph Priestly: discovered oxygen
- Benjamin Franklin: invented bifocals, found that colds could be passed from person to person
- Laennec: invented the stethoscope

19th and 20th Century

- Ignaz Semmelweiss: identified the cause of childbed fever (puerperal fever) which led to the importance of hand washing
- Louis Pasteur (1860 – 1895): discovered that microorganisms cause disease (germ theory of communicable disease)
- Joseph Lister: used carbolic acid on wounds to kill germs; first doctor to use an antiseptic during surgery
- Ernest von Bergman: developed asepsis
- Robert Koch: Father of Microbiology; specific germ causes specific disease; identified germ causing TB (in 1880's it killed 1 out of 7)
- Wilhelm Roentgen: discovered X-rays
- Paul Ehrlich: discovered effect of medicine on disease causing microorganisms i.e. Treatment for syphilis
- Anesthesia discovered (nitrous oxide, ether, chloroform)
- Gerhard Domagk: discovered sulfonamide drugs (1st medicine effective in killing bacteria
- Ivanoski: discovered viruses i.e. poliomyelitis, rabies, measles, influenza, Chickenpox, German measles, herpes zoster, mumps
- Alexander Fleming: discovered penicillin

- Jonas Salk: discovered that a killed polio virus would cause immunity to polio
- Alfred Sabin: discovered that a live virus provided more effective immunity

1900 to 1945

- acute infectious diseases (diphtheria, TB, rheumatic fever)
- no antibiotics, DDT for mosquitoes, rest for TB, water sanitation to help stop spread of typhoid fever, diphtheria vaccination
- hospitals were places to die
- most doctors were general practitioners

1945 to 1975

- immunization common, antibiotic cures, safer surgery, transplants, increased lifespan, chronic degenerative diseases, new health hazards (obesity, neuroses, lung cancer, hypertension), disintegrating families, greatly increasing medical costs

1975 to present

- artificial parts, bioengineering, cloning, bioethical issues, AIDS, drug resistant organisms, laser surgeries, laparoscopic surgeries, managed health care, etc.

Medical and Dental History Questions

1. What contribution to medicine did Hippocrates make? What is the "title" commonly given to him?

2. Which group of people was responsible for the earliest recording of health care?

3. In ancient times, what were thought to be the causes of diseases?

4. Explain what the Eye of Horus was.

5. In what ways was public health encouraged by the Greeks and Romans?

6. In ancient times, on what were medical records and prescriptions written?

7. Name some examples of ancient treatments still in use today.

8. What diseases of ancient times are still treated today?

9. What was one of the early names given to the person now known as a dentist?

10. Who first applied science to dental treatment? List some of his achievements.

11. What are some evidences of early people's concern for teeth?

12. Even as late as 1500 A.D., what was thought to be the main cause of dental disease?

13. When and where was the first medical school that included dental surgery organized in America?

Medical and Dental History Questions Key

1. What contribution to medicine did Hippocrates make? What is the "title" commonly given to him?
   Classified diseases, code of ethics for doctors, Father of Medicine

2. Which group of people was responsible for the earliest recording of health care?
   Egyptians, Sumerians, Babylonians

3. In ancient times, what were thought to be the causes of diseases?
   Demons, evil spirits

4. Explain what the Eye of Horus was.
   Son of Isis (Egyptian goddess) fought Seth, his uncle, and lost his eye which was restored by the god Thoth; eye was then thought to have magical healing powers; used as an amulet to ward off evil spirits; also hung over doorways to ward off evil; became transformed by the Romans into the number V which went through more transformations to be our modern day sign for prescriptions (Rx)

5. In what ways was public health encouraged by the Greeks and Romans?
   Public doctors' offices, aqueducts, flood control, sewers, controlled construction of homes and streets

6. In ancient times, on what were medical records and prescriptions written?
   Papyrus and stone tablets

7. Name some examples of ancient treatments still in use today.
   Faith healing, setting bones, enemas, herb remedies, circumcision, acupuncture

8. What diseases of ancient times are still treated today?
   Tuberculosis, leprosy, venereal diseases, measles, arthritis, typhoid fever, malaria

9. What was one of the early names given to the person now known as a dentist?
   "keeper of the teeth"

10. Who first applied science to dental treatment? List some of his achievements.
    Celsus (1st dental surgeon); plastic surgery, packing to stop bleeding

11. What are some evidences of early people's concern for teeth?
    Egyptians: dental prescriptions
    China: descriptions of gum disease and cleft lip repair
    Hippocrates: invented toothpaste

12. Even as late as 1500 A.D., what was thought to be the main cause of dental disease?
    Toothworms

13. When and where was the first medical school that included dental surgery organized in America?
    1840 in Baltimore College of Dentistry

Medical History Vocabulary

1. ancient: of or belonging to times long past
2. historical: of or having to do with a record of past events
3. sequential: in order
4. treatment: act or process of providing therapy
5. discovery: act of finding
6. contribution: donation; something given
7. allopathic: having to do with method of treating a disease by using different remedies to produce effects different from those caused by the disease
8. osteopathic: literally, manipulating muscles and bones
9. era: period of time
10. predators: organisms or beings that destroy
11. superstitious: trusting in magic or chance
12. accurate: exact, correct, precise
13. observation: act of watching
14. monasteries: homes for men following religious standards
15. custodial: take care of
16. dissection: dividing or taking apart
17. quackery: untrained person who practices false medicine
18. stethoscope: instrument used to hear sound in the body (i.e. heart, bowel sounds)
19. microorganisms: organisms so small that they can only be seen through a microscope
20. antiseptic: against infection
21. asepsis: sterile condition; free from all germs
22. anesthesia: loss of feeling or sensation
23. recipient: one that receives
24. noninvasive: to perform tests that do not penetrate the body
25. geriatric: pertaining to old age

Medical History Project

Investigate the social and political happenings during your assigned time period and relate these to the medical happenings and famous medical people of the time period. Oral group reports must include visual aids / multimedia technology. Develop and submit a set of test questions based on the group investigation.

I. Ancient Times: Egypt, Jewish, Arabs, Miscellaneous
   A. Eye of Horus
   B. Pharaohs
   C. Babylonians
   D. Sumerians
   E. Jewish
   F. Egyptians
   G. Chinese

II. Greeks and Romans
   A. Hippocrates
   B. Aesculapius
   C. Public Health
   D. Galen
   E. Vesalius

III. Dark Ages
   A. Epidemics
   B. B.Laws
   C. Schools
   D. Famous People

IV. Renaissance
   A. Schools
   B. Books
   C. Dissections
   D. Famous People

V. 16th and 17th Century
   A. Leonardo da Vinci
   B. Anton von Leeuwenhoek
   C. William Harvey
   D. Gabriele Fallopius
   E. Bartolemmeo Eustachus
   F. Others

VI. 18th Century
   A. Edward Jenner
   B. Joseph Priestly
   C. Benjamin Franklin
   D. Laennec
   E. Others

VII. 19th and 20th Century
   A. Ignaz Semmelweiss
   B. Louis Pasteur
   C. Joseph Lister

D. Ernest von Bergman
E. Robert Koch
F. Wilhelm Roentgen
G. The Curies
H. Paul Ehrlich
I. Gerhard Domagk
J. Ivanoski
K. Alexander Fleming
L. Jonas Salk
M. Alfred Sabin

VIII. Miscellaneous
A. Walter Reed
B. Morton, D.D.S.
C. Lind
D. Best and Banting
E. Clara Barton
F. Drew
G. Coram
H. Sappington
I. Florence Nightingale
J. Others of Interest

Healthcare Heroes

In health care, personal traits like character, values, morals, ethics, integrity, and trustworthiness are vital. The student will identify character traits through investigating a health care professional.

I. Literature contains many stories of people who have been healthcare providers throughout history
   A. Learning about the lives and experiences of these people can be informational and inspirational
   B. Have a hero or heroine provides role models
II. Character traits or historical figures
   A. Professionalism- individual traits that contribute to the workplace
      1. Be to work on time
      2. Perform the responsibilities of job with competence
      3. Keep promises and meet obligations
   B. Personal values – things that have a high degree of worth to the individual
   C. Reputation – estimation in which a person is held by the community
   D. Morals – capability of differentiation between right and wrong
   E. Integrity – the quality or state of being of sound moral principal
   F. Trustworthiness – dependable, reliable
   G. Respect – to show consideration for
   H. Honesty – being free from deceit; sincere, fair

Directions:
Research someone that is/was a health care worker and report on how their personal traits affected their professional life. A sample list of health care workers is as follows: Florence Nightingale, DeBakey, Sualk, etc.

Guidelines:
The report should be a minimum of two pages in length (handwritten). Typed papers must be double spaced, using a 12 or 14 font. There should be an introductory paragraph, two or three paragraphs summarizing the person and a concluding paragraph. The introductory paragraph must include the source and author where the information was found. The concluding paragraph must contain one to two sentences summarizing how their personal traits affected their professional life. The paragraph construction needs to include introductory sentences, supporting sentences, and a concluding sentence or a transition sentence.

Team Work Rubric

Student: _____ Date: _____

Scoring criteria	4. Excellent	3. Good	2. Needs Some Improvement	1. Needs Much Improvement	N/A
Participates in group discussions and encourages others to join the conversation.					
Effectively works to keep the discussion moving in a rapid progression to achieve goals.					
Actively shares ideas and thoughts while offering helpful criticism and recommendations to others.					
Gives credit to others for their ideas and understands the feelings and thoughts of others.					
Involves others by asking questions or requesting input to reach an agreement.					
Clearly and effectively expresses ideas and thoughts.					

NOTE: N/A represents a response to the performance which is "not appropriate."

Oral Presentation Rubric

Student: _____ Date: _____

Scoring criteria	4. Excellent	3. Good	2. Needs Some Improvement	1. Needs Much Improvement	N/A
Clearly and effectively communicates the main idea or theme.					
Presenter is self-confident and clearly expresses ideas.					
Presenter answers questions with well thought out responses.					
Holds audience attention and maintains eye contact.					
Visual aids are clear and add to the presentation.					

NOTE: N/A represents a response to the performance which is "not appropriate."

Multimedia Rubric

Student:_____ Class:_____

Title:_____ Other Group Members:_____

Date:_____ _____

Scoring criteria	5 Excellent	4 Good	3 Needs Some Improvement	2 Needs Much Improvement	1 N/A
Clearly and effectively communicates an introduction of the theme/objective of the project.					
Clearly and effectively communicates the content throughout the presentation.					
Integrated a variety of multimedia resources to create a professional presentation (transition, graphics).					
Presentation holds audience attention and relates a clear message.					
Timing between slides is beneficial for the viewer to read or observe content.					
Each image and font size is legible to entire audience.					

Scale:
26-30 A Excellent
21-25 B Good
16-20 C Needs Some Improvement
11-15 D Needs Much Improvement
6-10 F Not Appropriate
TOTAL=

Comments