

INTRODUCTION TO HEALTH INFORMATICS

Curriculum Content Frameworks

Prepared by

Karla Blackwood, Paragould School District
Carol Croy, Paragould School District
Sara Dickey, Paragould High School
Kevin Gill, Paragould High School
Kina Knight, Paragould High School
Debbie Smith, Paragould School District

Facilitated by

Karen Chisholm, Program Coordinator
Lesia Edwards, Program Advisor
Office of Assessment and Curriculum
Arkansas Department of Career Education

Edited by

James Brock, Program Coordinator
Ginger Fisher, Program Advisor
Office of Business and Marketing Technology
Ray Winiecki, Program Coordinator
Barbara Dimon, Program Advisor for Medical Professions
Office of Skilled and Technical Sciences
Arkansas Department of Career Education

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Arkansas Department of Career Education

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INTRODUCTION TO HEALTH INFORMATICS

Grade Levels: 9-12

Prerequisite: Computer Business Applications

Course Description: The course will provide understanding about employability or “soft skills,” to enhance employment opportunities, and job satisfaction. It will also explore history, trends, and careers in Health Informatics, as well as legal, ethical and safety associated issues related to health careers. Basic principles of infection control that are essential for all workers in any healthcare field will be studied.

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Unit 1: Medical History and Events

Hours: 10

Terminology: Epidemic, Middle Ages, Renaissance, Vaccine

- 1.1 Define terminology related to Health Informatics
 - 1.1.1 Use terms appropriately in context
- 1.2 Describe the origin of healthcare institutions from ancient Greek/Roman times through the 21st century
 - 1.2.1 Prepare and present a paper on a chosen era, invention, inventor, or discovery
 - 1.2.2 Discuss changes in healthcare and how these changes influence today's healthcare
- 1.3 Outline the major advances through the 21st century regarding healthcare
 - 1.3.1 Discuss changes in the workforce
 - 1.3.2 Research advances in the 20th and 21st century
 - 1.3.3 Assess cultural roles and changes in the 20th and 21st centuries
- 1.4 Describe new and future developments in technology that will affect the healthcare industry
 - 1.4.1 Investigate a recent healthcare issue, development, or technology and its implications

Unit 2: Exploring Health Informatics Occupations

Hours: 7

Terminology: Admitting officers/clerks, Associate's degree, Bachelor's degree, Certification, Chain of command, Continuing education units (CEUs), Employee handbook, Epidemiologist, Health information (medical records) administrators (RAs), Health information (medical records) technicians, Job descriptions, Job interview, Licensure, Master's degree, Medical illustrators, Medical interpreters/translators, Medical librarians (also called health sciences librarians), Medical transcriptionist, Mentor, Networking, Policies, Probationary period, Professional development, Résumé, Role model, Safety standards, Unit secretaries (ward clerks or health unit coordinators)

- 2.1 Define terminology related to Health Informatics occupations
 - 2.1.1 Use terms appropriately in context
 - 2.1.2 Research careers in Health Informatics
 - 2.1.3 Prepare a list of occupations in Health Informatics

- 2.2. Determine skills and education required for Health Informatics occupations
 - 2.2.1 Explore job outlook to year 2020
 - 2.2.2 Document average yearly salary for careers in Health Informatics

- 2.3 Identify local Health Informatics personnel
 - 2.3.1 Invite Health Informatics personnel to speak
 - 2.3.2 Discuss various local job opportunities in Health Informatics
 - 2.3.3 Take a field trip to explore Health Informatics occupations

Unit 3: Qualities of Successful Healthcare Workers

Hours: 10

Terminology: Cultural diversity, Discrimination, Empathy, Patience, Responsibility, Stereotyping, Tact

- 3.1 Define terminology related to qualities of a successful healthcare worker
 - 3.1.1 Use terms appropriately in context
- 3.2 List personal qualities of a healthcare worker
 - 3.2.1 Perform an inventory of personal qualities as they relate to a career in the healthcare field
 - 3.2.2 Note desirable personal qualities of a healthcare worker
- 3.3 Describe appropriate clothing for a healthcare worker
 - 3.3.1 Note possible risks of wearing inappropriate clothing
 - 3.3.2 Differentiate between acceptable and unacceptable clothing for different healthcare workers
- 3.4 State the importance of good personal hygiene for the healthcare worker
 - 3.4.1 Determine good personal hygiene habits
 - 3.4.2 Discuss behaviors that would be considered poor personal hygiene
 - 3.4.3 Predict the consequences to self and patients from poor personal hygiene
- 3.5 Identify professional appearance of a healthcare worker
 - 3.5.1 Critique the appearance of healthcare workers in selected photographs
 - 3.5.2 Predict possible ramifications of an unprofessional appearance
- 3.6 Identify employment skills that both males and females need in the healthcare field
 - 3.6.1 Relate employment skills that both males and females need to cope in a constantly changing workplace
 - 3.6.2 Determine desirable employment skills needed by both males and females in the healthcare field

Unit 4: Professionalism, Ethics, and Legalities

Hours: 13

Terminology: Benevolence, Ethics, False imprisonment, Health insurance portability, Invasion of privacy, Living will, Malpractice, Negligence, Patient confidentiality, Privileged communication, Tort law

- 4.1 Define terminology related to professionalism, ethics, and legalities in Health Informatics
 - 4.1.1 Use terms appropriately in context
- 4.2 Identify tort laws that affect healthcare
 - 4.2.1 Discuss the effects of tort laws on healthcare
 - 4.2.2 Predict the legal consequences of tort laws that are not upheld
- 4.3 Describe the effect of privileged communication in healthcare
 - 4.3.1 Research articles dealing with legalities in the healthcare profession
 - 4.3.2 Differentiate between what is and what is not privileged communication information
 - 4.3.3 Analyze the ramifications of sharing privileged communication with individuals who are not privy to such information
- 4.4 Identify ethical considerations in the healthcare profession
 - 4.4.1 Address the ethical and legal responsibilities of healthcare workers
 - 4.4.2 Simulate a situation that depicts ethical and unethical conduct
 - 4.4.3 Develop a code of ethics for the classroom
 - 4.4.4 Develop a code of ethics that would apply to any healthcare worker
 - 4.4.5 Address the legal, employment, and professional consequences of unethical or illegal conduct
- 4.5 Identify the rights of the patient
 - 4.5.1 Compare copies of patients' rights from local healthcare agencies
 - 4.5.2 Prepare a living will

Unit 5: Safety

Hours: 13

Terminology: ABCs of CPR, Cardiopulmonary resuscitation, Convulsion, Diaphoresis, Dislocation, First degree burn, Fourth degree burn, Fracture, Hypothermia, Pressure bandage, Second degree burn, Sprain, Strain, Third degree burn

- 5.1 Define terminology related to safety in Health Informatics
 - 5.1.1 Prepare a written list of terms and definitions related to safety
- 5.2 Outline the basic rules of good body mechanics
 - 5.2.1 Demonstrate correct body mechanics
- 5.3 Identify safety regulations for equipment and solutions used in Health Informatics
 - 5.3.1 List and define sections of the Material Safety Data Sheet (MSDS)
 - 5.3.2 Demonstrate proper usage of medical equipment
- 5.4 Discuss regulations for patient safety when performing procedures in the laboratory or clinical area
 - 5.4.1 Demonstrate proper patient safety procedures
 - 5.4.2 List consequences of not following proper safety procedures
- 5.5 Discuss regulations to observe for personal safety
 - 5.5.1 Create posters promoting safety regulations
 - 5.5.2 Formulate specific safety regulations for the classroom
- 5.6 Identify three elements needed to start a fire
 - 5.6.1 List the three elements needed to start a fire
- 5.7 Describe the main classes of fire extinguishers
 - 5.7.1 List and describe the main classes of fire extinguishers
- 5.8 Outline fire safety and evacuation guidelines
 - 5.8.1 Simulate the operation of a fire extinguisher
 - 5.8.2 Illustrate a fire evacuation plan/route for the classroom

Unit 6: Infection Control

Hours: 7

Terminology: Antisepsis, Autoclave, Bacilli, Contaminated, Disinfection, Spore, Sterile, Sterilization, Toxins

- 6.1 Define terminology associated to infection control
 - 6.1.1 Prepare a written list of terms and definitions related to infection control
- 6.2 Discuss classification of microorganisms
 - 6.2.1 List different classifications of micro-organisms
 - 6.2.2 Give examples for each different classification
 - 6.2.3 Identify shapes and characteristics of common microorganisms
 - 6.2.4 View slides of various microorganisms
- 6.3 Discuss elements in the chain of infection
 - 6.3.1 Determine ways to break the chain of infection
- 6.4 Distinguish between antisepsis, disinfection, and sterilization
 - 6.4.1 Define antisepsis, disinfection, and sterilization
 - 6.4.2 Differentiate between antisepsis, disinfection, and sterilization
- 6.5 Describe how pathogens affect the body
 - 6.5.1 List effects pathogens have on the body
- 6.6 Outline the correct procedure for washing hands
 - 6.6.1 Demonstrate the correct procedure for washing hands
- 6.7 Outline universal blood and body fluid precautions
 - 6.7.1 Demonstrate universal precautions
 - 6.7.2 Discuss health risks associated with not following precautions
- 6.8 Discuss methods of infection control
 - 6.8.1 Demonstrate a method of infection control
 - 6.8.2 List and describe methods of infection control
 - 6.8.3 Discuss the healthcare worker's role in infection control

Glossary

Unit 1: Medical History and Events

1. Epidemic – generally a widespread disease that affects many individuals in a population; may be restricted to one locale or may be global (pandemic); an outbreak of a disease is defined as being epidemic by how fast it grows
2. Middle Ages – historical period between roughly 500 and 1450 A.D.
3. Renaissance – an influential cultural movement that brought about a period of scientific revolution and artistic transformation at the dawn of modern European history; usually considered to have begun in the 14th century in Italy and the 16th century in northern Europe
4. Vaccine – an antigenic preparation used to produce active immunity to a disease to prevent the effects of infection by any natural or “wild” strain of the organism

Unit 2: Exploring Health Informatics Occupations

1. Admitting officers/clerks – person who coordinates activities related to admission of patients in a hospital or other healthcare facility
2. Associate's degree – degree awarded by a vocational technical school or community college after successful completion of a two-year course of study or its equivalent
3. Bachelor's degree – degree awarded by a college or university after a person has completed a four-year course of study or its equivalent
4. Certification – means that a person has fulfilled requirements of education and performance and meets the standards and qualifications established by the professional association or government agency that regulates a particular career
5. Chain of command – each person reports to a supervisor who, in turn, reports to another supervisor at the next higher level
6. Continuing education units (CEUs) – training required to renew licenses or maintain certification or registration in many states
7. Employee handbook – source of employment policies
8. Epidemiologist – person who studies the history, cause, and spread of an infectious disease
9. Health information (medical records) administrators (RA) – person who plans, coordinates, and supervises a medical record system; collects, maintains, and reviews medical records
10. Health information (medical records) technician – person who organizes and codes patient records, monitors electronic and paper-based information to ensure confidentiality, and calculates bills using healthcare data
11. Job description – specific information about a job
12. Job interview – face-to-face meeting or conversation between an employer and an applicant for a job
13. Licensure – process whereby a government agency authorizes individuals to work in a given occupation
14. Master's degree – degree awarded by a college or university after completion of one or more years of prescribed study beyond a bachelor's degree
15. Medical illustrator – person who provides a wide range of clinical photography and graphic services to healthcare providers
16. Medical interpreters/translators – person who translates one language to another in a healthcare setting
17. Medical librarian (also called health sciences librarian) – trained information specialist who provides, organizes, and retrieves a variety of resources for healthcare providers

18. Medical transcriptionist – an individual who has obtained necessary education to translate medical dictation into meaningful, legible communication
19. Mentor – a person who acts as a coach or advisor
20. Networking – making and maintaining connections among people or groups that a person comes in contact with
21. Policy – rules established and followed by an organization
22. Probationary period – time (typically 60 to 90 days) for employer and employee to determine if they are a “match”
23. Professional development – training and education needed to maintain and enhance knowledge and increase the skill level of the employees
24. Résumé – organized listing of personal contact information, work experience, education information, school/activities/professional organizations, and references
25. Role model – person who serves as a possible example by demonstrating high levels of professionalism and competence
26. Safety standards – set of rules designed to protect both the patient and the healthcare worker
27. Unit secretaries, ward clerks, or health unit coordinators – persons employed in hospitals, extended care facilities, clinics, and other health facilities to record information on records, schedule procedures or tests, answer telephones, order supplies, and work with computers to record or obtain information

Unit 3: Qualities of a Successful Healthcare Worker

1. Cultural diversity – integrated existence of ethnic groups based on their values, beliefs, and behavior patterns (social, educational, economic, religious, and artistic values)
2. Discrimination – to judge others based only on social, racial, religious, sexual, ethnic, or age-related differences
3. Empathy – the recognition and understanding of the feelings, thoughts, or attitudes of another person
4. Patience – even-tempered care; endurance
5. Responsibility – the obligation for the proper custody, care, and safekeeping of property or funds entrusted to the possession or supervision of an individual
6. Stereotyping – a conception of an individual or group of people who share common characteristic (or stereotypical) qualities
7. Tact – a careful consideration of the feelings and values of others

Unit 4: Professionalism, Ethics, and Legalities

1. Benevolence – an act intending or showing kindness and good will
2. Ethics – a system of moral standards or values
3. False imprisonment – confinement without legal authority
4. Health Insurance Portability and Accountability Act – a federal regulation that gives patients greater access to their own medical records and more control over how their personally identifiable health information is used; also addresses the obligations of healthcare providers and health plans to protect personal health information
5. Invasion of privacy – revealing personal information about an individual without his or her consent
6. Living will – a legal document stating a person's desire on what measures should or should not be taken to prolong life when his or her condition is terminal
7. Malpractice – providing improper or unprofessional treatment or care that results in injury to another person
8. Negligence – failure to give care that is normally expected, resulting in injury to another person
9. Patient confidentiality – a requirement for medical professionals to not disclose any medical information revealed by a patient or discovered by the medical professional in connection with the treatment of a patient
10. Privileged communication – all personal information given to healthcare personnel by a patient; must be kept confidential
11. Tort law – in common law, a civil wrong for which the law provides a remedy

Unit 5: Safety

1. ABCs of CPR – an acronym used to assist in remembering the steps of CPR; stands for airway, breathing, chest compressions
2. Cardiopulmonary resuscitation (CPR) – a method of artificial breathing and circulation usually administered by a CPR certified responder when the natural heart action and breathing have stopped
3. Convulsion – a sudden attack characterized by a loss of consciousness and severe, sustained, rhythmic contractions of some or all voluntary muscles; are most often a manifestation of a seizure disorder
4. Diaphoresis – excessive sweating commonly associated with shock and other medical emergency conditions
5. Dislocation – condition where bones that usually meet at a joint have completely lost contact with each other at the joint surface and are displaced; usually results from trauma
6. First degree burn – involves minimal tissue damage of the epidermis (skin surface); these burns affect the outer layer of skin, causing pain, redness, and swelling; sunburn is a good example of a first-degree burn
7. Fourth degree burn – a fourth degree burn goes through all the layers of the skin and down into the muscle and the bone; it looks like a third degree burn and does great harm to the body structure; since the nerves are burnt there is little pain in this burn
8. Fracture – breach in continuity of a bone; types of fractures include simple, compound, comminuted, greenstick, incomplete, impacted, longitudinal, oblique, stress or transverse
9. Hypothermia – a decrease in the core body temperature that impairs normal muscular and cerebral functions; it occurs when the body loses heat faster than it is replaced; symptoms begin when the core body temperatures drop below 95 degrees F (35 degrees Celsius)
10. Pressure bandage – a kind of bandage designed to reduce the flow of blood to a particular area of the body by applying pressure there
11. Second degree burn – a burn that injures the top layers of skin, called the epidermis, and extends down to the deeper layers of skin, called the dermis
12. Sprain – a sudden or violent twist or wrench of a joint causing the stretching or twisting of ligaments and often rupture of blood vessels with hemorrhage to the tissues
13. Strain – injury to a muscle (often caused by overuse); results in swelling and pain
14. Third degree burn – burns that extend into deeper tissues; they cause white or blackened, charred skin that may be numb

Unit 6: Infection Control

1. Antisepsis – destruction for disease-causing microorganism to prevent infection
2. Autoclave – a device to expose items to steam at a high pressure in order to decontaminate the materials or render them sterile
3. Bacilli – long, rod-shaped bacteria
4. Contaminated – refers to air, water, soil, or food that has been polluted by dangerous chemicals or infectious microbes (virus, bacteria, or parasites) so that it becomes unusable or harmful
5. Disinfection – to cleanse so as to destroy or prevent the growth of disease-carrying microorganisms
6. Spore – a minute reproductive body produced by primitive organisms, such as ferns and fungi
7. Sterile – free of or using methods to keep free of pathological microorganisms
8. Sterilization – the act or procedures of removing live bacteria; the state or condition of being free from microorganisms
9. Toxins – chemical or natural substances that can cause harmful effects on humans; toxins include heavy metals such as cadmium, lead, and mercury, as well as organic compounds like petroleum products