

# HealthCenter21 – Specifications



## Instructional Areas

Health Care Systems  
Legal and Ethical Responsibilities  
Medical Terminology  
Infection Control  
Communications  
Anatomy and Physiology  
Human Growth and Development  
Medical Mathematics  
Wellness and Nutrition  
Client Status  
Safety Precautions  
CPR Methods  
Emergency Care  
Personal Qualities  
Health Care Careers  
Job Seeking Skills



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# Overview

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**HealthCenter21™** is a unique laboratory system that provides a means for entry into health services employment or the foundation for later career specialization via specific occupational training. Using sound learning theory and leading-edge instructional technology, the **HealthCenter21™** system features standards-based curriculum, interactive multimedia, hands-on activities, authentic assessments, teacher management tools, and curriculum customization.

Students explore sixteen units of instruction based on the *National Health Care Foundation Skill Standards*, including:

- Health Care Systems
- Legal and Ethical Responsibilities
- Medical Terminology
- Infection Control
- Communications
- Anatomy and Physiology
- Human Growth and Development
- Medical Mathematics
- Wellness and Nutrition
- Client Status
- Safety Precautions
- CPR Methods
- Emergency Care
- Personal Qualities
- Health Care Careers
- Job Seeking Skills

In addition, an Introduction unit shows students the tools for using this course and how to be responsible for their own learning and progress. Students also build a foundation of skills through repeated exposure to important core themes, including:

- Personal Responsibility
- Communication Skills
- Safety Precautions
- Computation Skills
- Career Development

# Learning Plan

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Students need to understand the technical and interpersonal aspects of care and develop the ability to apply them in the proper care-giving situation. They must also recognize that the role of the health care professional requires the highest standards in work ethic and personal responsibility.

**HealthCenter21** includes a comprehensive learning plan, derived from the standards, that incorporates the full range of assessment methods. The content is easy to understand and review, and students can quickly return to their places each class session using a bookmark feature.

Students will:

- Discuss course topics as a class, with the teacher initiating classroom discussions via provided PowerPoint® presentations.
- Navigate through the multimedia presentations, interactive exercises, and on-screen questions at their own pace.
- Observe, evaluate, and even interact with a wide array of 3-D animated patients and coworkers to refine communication skills in a safe and controlled environment.
- Identify the steps of common health care procedures. Procedures are first explained with narration and step-by-step illustrated instructions, and then followed with activities that refine the students' understanding of the procedure.

## Health Care Procedures

**HealthCenter21** incorporates critical health care procedures in many areas, such as hand washing and donning personal protective equipment. Students partner with one another to conduct hands-on lab exercises that stress the importance of personal responsibility and safety precautions, including government guidelines such as OSHA.

Students practice procedures, such as taking vital signs, transferring patients, and providing first aid using authentic medical equipment and supplies that they will encounter in health care facilities. All equipment and materials provided with the course are organized in a space-efficient storage system.

Each procedure session concludes with a teacher assessment of proficiency. Enhancement activities are available for students as they complete the lab work. The curriculum topic area culminates with an individual student quiz on the material.

In addition to regular quizzes, cumulative tests and a final exam are provided to reflect the growth in understanding as the student advances through the course.

# Management System

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At the heart of the **HealthCenter21™** system is webTRAC, a server-based classroom management system designed to simplify Tracking, Reporting, Assessment, and Control in the lab. WebTRAC performs such functions as:

## 1. Course Setup

On-screen help guides teachers through the process of setting up and running a successful classroom.

## 2. Assessment

Automatically evaluated questions provide students with instant feedback on their progress, while procedure checklists and performance rubrics enable teachers to efficiently and consistently assess student performance. Quizzes, tests, and exams add to the overall picture of student understanding.

## 3. Monitoring

Student activities and progress can be monitored from the teacher's station. Teachers can also log students off of the system from the teacher's station.

## 4. Reporting

A wide range of reports can be generated using the electronic gradebook and electronic student journal database. Assessments are correlated directly to the standards to provide teachers with a printable record of student achievement.

## 5. Customization

The included *Curriculum Builder* software allows the instructor to customize content, questions, tests, and even launch software applications from within the curriculum.

# Components

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**HealthCenter21™** contains the components necessary for a successful experience for both the instructor and the students. Included with the system are:

## 1. Curriculum Materials

- CD-ROM software for each unit
- Teacher Manual for each unit
- Student Project Manuals
- HealthCenter21 Course Guide

## 2. Laboratory Management Package

- webTRAC Management Software, including on-line Help
- webTRAC Installation Guide

## 3. Equipment and Supplies Package *(see HealthCenter21 equipment list)*

## 4. Professional Development Package

- Intensive Teacher Training Seminar
- Training Seminar Guide

## 5. Client Services

- Toll-Free Technical Support
- Website Knowledge Base

# HealthCenter21 Equipment and Materials

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## Consumable Items

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Agar Petri dishes  
Alcohol preps  
Colored pencils  
CPR shields  
Face masks  
Germ Detector solution  
Gloves, clean  
Gloves, sterile  
Probe covers  
Rolled gauze, 1" and 3"  
Sterile gauze pads

# HealthCenter21 Equipment and Materials

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## Lab Items

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Bath basins  
Biohazard bags  
Biohazard linen bags  
Biohazard container  
Blankets  
Calculators  
Cloth tape  
Colored pencils  
Cotton swabs  
CPR Adult mannequin  
CPR Child mannequin  
CPR Infant mannequin  
Crutches  
Elastic bandages  
Germ Detector  
Gloves, utility  
Ice packs  
Instrument brushes  
Isolation gowns  
Linen bag  
Manila folders  
Markers  
Nailbrushes  
Paper, multiuse  
Paper towels  
Pillows  
Rulers  
Safety goggles  
Safety pins  
Scale, balance-beam  
Scissors  
Skeleton model  
Snellen eye chart  
Sphygmomanometers  
Stethoscopes (teacher and student versions)  
Tape measure  
Thermometers, oral digital  
Thermometers, tympanic  
Torso model  
Towels  
Transfer belt  
Trash bags  
Triangular bandages  
Tweezers  
Watches with second hand  
Wheelchair

# Academic Student Objectives

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- Extends general and specialized reading vocabulary.
- Constructs images such as graphic organizers based on text descriptions and text structures.
- Uses discussions with peers as a way of understanding information.
- Expands vocabulary through reading, listening, and discussing.
- Adjusts message wording and delivery to particular audiences and for particular purposes.
- Applies appropriate interviewing techniques.
- Makes formal presentations to the class.
- Chooses valid evidence, proofs, or examples to support topic.
- Applies meaning of prefixes, roots, and suffixes in order to comprehend vocabulary.
- Students use precise and descriptive language that clarifies and enhances ideas and supports different purposes.
- Adds, subtracts, multiplies, divides, and simplifies rational expressions.
- Make decisions about units and scales that are appropriate for problem situations involving measurement.
- Solve problems that arise in mathematics and in other contexts.
- Communicate their mathematical thinking coherently and clearly to peers, teachers, and others.
- Use the language of mathematics to express mathematical ideas precisely.
- Recognize and apply mathematics in contexts outside of mathematics.
- Uses technology and mathematics to improve investigations and communications.

# Health Care Systems

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## Unit Overview

In the Health Care Systems Exploration, students use phone books and other resources to locate local health care facilities.

In the Learn & Practice, students are introduced to the structure of health care and its history, from ancient to modern times. Students then learn about systems theory and how it is implemented in the health care industry. Students discover that there are multiple delivery systems and types of ownerships, including for-profit, non-profit, and government. Students explore the facilities that compose the health care system, such as hospitals, clinics, medical offices, and long-term care facilities. They learn how to evaluate the success of health care facilities.

Students identify characteristics of managed care. Students practice calculating health care costs based on several types of insurance plans. Students look at socio-economic issues and access to affordable quality care.

Students also review trends in health care systems, including cost containment and the growth of technology, and describe how these trends will affect them as a health care worker.

In the Reflection, students consider several open-ended questions and write their responses in their journals. The class then discusses the issues raised in the questions and how they might react as health care workers.

Projects relating to Health Care Systems lead the students in identifying the components of a system and evaluating the system. Students also research historical figures in health care and assume the roles of their characters during a simulated talk show.

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## Key Questions

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*What is a health care system?*

*What issues are facing today's health care systems?*

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## Highlights

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System Theory

Managed Care

Cost-Containment

Socio-Economics

## Student Objectives:

- Describe systems theory and its components.
- Construct a general systems model using inputs, throughputs, and a feedback loop.
- Discuss the history of health care services.
- Identify the basic components of the health care delivery system.
- Identify and evaluate the services of two healthcare government agencies and two healthcare nonprofit agencies.
- Construct a healthcare delivery system model.
- Describe the impact of health services on the economy
- Predict where and how cost, managed care, technology, and aging population, and alternative therapies may affect various health care delivery system models.
- Analyze delivery systems throughout the continuum of care.
- Project outcomes as interconnected components of a modified health care system.
- Calculate the cost effectiveness of two separate health care delivery systems using the same client procedure.
- Explain the organizational structure in health care facilities.
- Describe the composition and functions of a health care team.
- Describe the various types of health care providers and the range of services available, including resources to victims of domestic violence.
- Diagram the interdependence of health care professions within a given health care delivery system and pertaining to the delivery of quality health care.
- Evaluate the impact of enhanced technology on the health care delivery system.
- Identify methods of reimbursements affecting the quality of health care delivery.
- Compare reimbursement methods (e.g., HMOs, private care, Medicare, Medicaid)
- Analyze the cause and effect on health care system change based on the influence of technology, epidemiology, bio-ethics, socio-economics, and various forms of complimentary medicine.
- Discuss the need for health insurance.
- Analyze insurance issues from the consumer and provider views.
- Respect interdisciplinary roles of team members.
- Describe the uses of computers in health care.
- Demonstrate knowledge of new and emerging communication technologies and technology trends.

# Legal and Ethical Responsibilities

## Unit Overview

The Legal and Ethical Responsibilities unit equips students to make sound decisions when faced with workplace situations. In the Exploration, students watch a role-play of a health care worker and discuss how the worker should respond.

The Patient's Bill of Rights is introduced and what it means to the health care worker. Students learn about Scope of Practice and the seriousness of performing outside of one's Scope of Practice. Tort laws, including unintentional and intentional torts, are explored. As part of contract law, students learn the terms implied and expressed contracts, legal disability, and agent. Students examine example scenarios and consider the legal implications.

The concepts of confidentiality and privileged communication are emphasized in light of government and facility regulations. The unit reviews technological threats to confidentiality, as well as efforts to maintain confidentiality.

Students then differentiate between laws, morality, and ethics. A variety of current bioethical issues in health care are discussed and students choose an issue to research.

Students reflect on the legal and ethical issues, and create a mock living will. Students also debate a current ethical issue in health care using the Lincoln-Douglas debate structure.

## Key Questions

*What should health care workers do so that they are legally responsible?*

*What should health care workers do so that they are ethically responsible?*

## Highlights

Patient's Bill of Rights

Scope of Practice

Torts

Contracts

Code of Ethics

Confidentiality/HIPAA

### Student Objectives:

- Maintain confidentiality in all communications.
- Analyze legal responsibilities, limitations, and implications of actions in health care occupations.
- Use problem solving techniques when confronted with legal dilemmas or issues.
- Analyze the basic legal responsibilities of healthcare workers in regards to torts
- Compare and contrast behaviors and practices that could result in malpractice, medical liability, or negligence.
- Analyze the basic legal responsibilities of healthcare workers in regards to invasion of privacy
- Comply with policies and requirements for documentation and record keeping.
- Comply with established risk management criteria and procedures.
- Determine when an incident is reportable.
- Practice within licensure, certification, registration, and legislated scope of practice.
- Discuss legal contracts and how they affect healthcare delivery.
- Discuss advance directives and durable power of attorney.
- Apply the doctrine of informed consent.
- Discuss the Patient Self -Determination Act.
- Discuss the Omnibus Budget Reconciliation Act (OBRA).
- Apply mandated standards for harassment, labor, and employment laws.
- Define the "Living Will".
- Value and identify ways to promote clients independence and determination.
- Discuss legal procedures for donating organs.
- Differentiate between ethical and legal issues impacting health care.
- Contrast personal, professional, and organizational ethics.
- Recognize and report abuse and neglect.
- Analyze legal and ethical aspects of confidentiality.
- Discuss bio-ethical issues related to health care.
- Explain the patients' "Bill of Rights."
- Contrast "Scope of Practice" for specific careers.
- Identify codes of ethics within the health care profession.
- Demonstrate fairness and equal treatment of all persons.
- Assess risks and benefits of technology in a given area.
- Discuss how computers affect legal and ethical questions in the health field.

# Medical Terminology

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## Unit Overview

The Medical Terminology unit introduces students to the language of health care workers. Students start by playing a cryptogram game to show the importance of being able to communicate in the field.

Students then learn body planes, directions, and cavities. They examine common prefixes and suffixes. Root words are added to the prefixes and suffixes to form complete medical terms. The root words are organized according to body system to help students retain their meanings. The next lesson adds abbreviations, and then students form phrases and interpret medical terms on their own. Throughout the unit, students work with a partner to improve their recognition of medical terms.

A class discussion on using medical terms completes the unit. Students then apply their knowledge of common roots, prefixes, and suffixes to translate medical terms on worksheets and puzzles.

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## Key Questions

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*What is notable about the terminology used in the medical field?*

*Why is it important for all health care workers to understand medical terminology?*

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## Highlights

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Root Words

Prefixes and Suffixes

Abbreviations

Body Planes and Cavities

### **Student Objectives:**

- Explain body planes.
- Explain directional terms.
- Explain quadrants (of the abdominal region).
- Identify body cavities and the organs they contain.
- Pronounce common medical terms and abbreviations necessary to safely carry out medical instructions.
- Use medical terminology and abbreviations within a scope of practice in order to interpret, transcribe, and communicate information, data and observations.
- Use anatomical terminology to describe location of parts or areas of the body.
- Use anatomical terminology to describe the relation of one part or area of the body to another.
- Use correct medical terminology, including prefixes and suffixes to indicate anatomical structures.
- Provide written communication that is accurate and grammatically correct, using nomenclature appropriate to the environment.

# Infection Control

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## Unit Overview

The Infection Control unit teaches the importance of protecting oneself and others from disease-causing microorganisms. The unit begins with students doing an experiment to analyze their hand washing technique..

In the Learn & Practice, students explore the four main classes of microorganisms and how they cause infection. Students learn how asepsis is used to eliminate the spread of infection. Students then practice hand washing and basic equipment cleaning. They also practice donning and removing personal protective equipment, including non-sterile gloves, gowns, masks, and eyewear. Students also learn about sterile technique. They identify guidelines for working in a sterile field and handling sterile objects. Students complete the lesson by following the correct steps to don and remove sterile gloves.

Next, students learn about transmission-based precautions. They identify specific communicable diseases which require these precautions, and how to distinguish between airborne precautions, droplet precautions, and contact precautions. Students practice donning and removing transmission-based protective garments and demonstrate how to work in an isolation unit.

In the Reflection, students consider several open-ended questions and write their responses in their journals.

Hand washing skills are reinforced through a project that uses a germ detector machine. Students will chart and gather data, and then write a summary of the experiment.

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## Key Questions

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*What is infection control?*

*Why is infection control important in health care facilities?*

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## Highlights

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Microorganisms

Hand Washing

Equipment Cleansing

Personal Protective Equipment

## Student Objectives:

- Compare selected diseases/disorders including respective classification(s), direct causes, and indirect causes.
- Explain the chain of transmission.
- Analyze methods to control the spread of pathogenic microorganisms.
- Demonstrate courtesy to others, including self introduction.
- Demonstrate ability to follow written directions.
- Evaluate the need for safety precautions in the classroom, laboratory, and all clinical settings.
- Apply safety precautions in the HSTE classroom, laboratory, and all clinical facilities that are utilized.
- Identify common communicable diseases and modes of transmission
- Identify the differences between clean, disinfect, and sterile.
- Practice infection control procedures.
- Practice appropriate cleaning processes.
- Identify sterilization methods.
- Demonstrate knowledge of medical and surgical asepsis.
- Practice asepsis procedures such as hand-washing and isolation.
- Evaluate the negative impact of nosocomial infections on healthcare delivery.
- Identify standard precautions for dealing with blood and body fluids.
- Apply Standard Precautions as described in the rules and regulations set forth by the Occupational Safety and Health Administration (OSHA.)
- Wear protective clothing and devices (gloves, gown or apron, mask, eye protection) appropriate for a given situation.
- Identify current Center for Disease Control (CDC) guidelines.
- Describe how to dispose correctly of biohazardous materials, according to appropriate government guidelines such as OSHA.

# Communications

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## Unit Overview

The Communications unit prepares students for the demands of speaking and writing as a member of the health care team. As an Exploration activity, students play a game to emphasize the importance of clear communication.

The components of the sender-receiver model are explored and students review an example of the model being used in a health care setting. Next students focus on verbal and non-verbal communication, and common barriers to communication. Students then explore diversity issues, including culture, ethnicity, and race, and how these issues affect communication. Students discuss how health care workers can show sensitivity and communicate successfully with others.

Students review examples of written communication and evaluate their effectiveness. Students learn how to correctly and accurately document patient observations.

Finally, students discuss communication technology and its role in the workplace. Students practice taking telephone messages and use a simulation to send an electronic mail message.

Students reflect on the communication issues that have been identified and work with a partner to create a skit portraying a communication-related situation. Students also have additional practice with skills such as organizing medical records and telephone etiquette.

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## Key Questions

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*Why is effective communication important in the health care industry?*

*How do attitudes of respect and sensitivity affect communication?*

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## Highlights

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Sender-Receiver Model  
Active Listening  
Communication Barriers  
Patient Interview  
Documentation  
Phone Etiquette  
Communication Tools

## Student Objectives:

- Apply the elements of communication using the sender-receiver model.
- Recognize the importance of patient/client education regarding health care.
- Demonstrate use of precise language to clearly communicate ideas.
- Identify attitudes and behaviors that promote positive interaction between the health care provider and client.
- Adapt communication skills to varied levels of understanding and cultural orientation.
- Identify barriers that can affect client confidence.
- Identify effective techniques for communicating with behaviorally or emotionally impaired clients; hearing-, speech-, and vision-impaired clients; mentally and physically challenged clients; and non-English or limited English proficiency.
- Demonstrate step-by-step procedures for problem solving
- Demonstrate telephone usage including taking messages.
- Differentiate between subjective and objective observations.
- Identify the different types of information collected in a health history.
- Recognize the importance of courtesy and respect for patients and other health care workers and maintain good interpersonal relationships.
- Discuss the difference between constructive and non-constructive criticism.
- Maintain professional standards in all documentation activities (e.g., accuracy, timeliness, confidentiality).
- Provide written communication that is accurate and grammatically correct, using nomenclature appropriate to the environment.
- Apply active listening skills using reflection, restatement, and clarification techniques.
- Demonstrate courtesy to others, including self introduction.
- Demonstrate examples of verbal and non-verbal communication.
- Demonstrate patient interviewing skills.
- Develop basic observational skills and related documentation strategies in written form.
- Analyze communications for appropriate response and provide feedback.
- Interact appropriately and respectfully with diverse ethnic, age, cultural, religious, and economic groups in various employment and social situations.
- Exhibit respectful and empathetic behavior when interacting with peers, superiors, subordinates, and customers in one-on-one and group situations.
- Identify or demonstrate appropriate responses to criticism from employer, supervisor, or other persons.
- Discuss the impact of religions and cultures on those giving and receiving health care with an understanding of past and present events.
- Compare and contrast strategies used by various cultures to solve problems related to health.
- Demonstrate respect of individual cultural, social, and ethnic diversity within the health care environment.

# Anatomy and Physiology

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## Unit Overview

This unit walks students through the body systems and how the systems interact with one another. Students begin with a teacher-led look at the provided human skeleton and torso models.

In the Learn & Practice, body structures are discussed as the units that create a body system. Twelve body systems are explored: Integumentary, Skeletal, Muscular, Nervous, Sensory, Circulatory, Lymphatic, Respiratory, Digestive, Urinary, Endocrine, and Reproductive. Students learn the structure, function, and diseases and disorders for each body system.

Following systems, students are introduced to homeostasis and immunity. The immune system is examined along with the responses and defense mechanisms of the body. Students then discuss interdependence of the body systems as it relates to diseases and disorders.

In the Reflection, students consider several open-ended questions and write their responses in their journals. Students research a disease or disorder and create a pamphlet to explain the disease to others.

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### Key Questions

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*How is the body organized?*

*How are the parts of the body interdependent?*

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### Highlights

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Body Systems

Diseases and Disorders

Homeostasis

Immunity

## Student Objectives:

- Define anatomy and physiology
- Define and explain homeostasis.
- Define cells, tissues, organs, and systems.
- Describe the basic structures and functions of cells, tissues, organs, and body systems as they relate to homeostasis.
- List the four main types of tissue.
- Analyze the interdependence of the body systems as they relate to wellness.
- Define the chemical processes that maintain life.
- Describe cell structure and function in diseased tissue.
- Discuss the immune system.
- Contrast various types of immunities
- List and discuss the body's defense mechanisms.
- Identify common diseases in each body system.
- Analyze the interdependence of the body systems as they relate to disease and disorders.
- Compare selected diseases/disorders including respective classification(s), diagnoses, therapies, and care/rehabilitation.

# Human Growth and Development

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## Unit Overview

The Human Growth and Development unit teaches the process of how people grow, develop, and age throughout the life span. In the Exploration, students discover how it feels to lose some of one's capabilities.

In the Learn & Explore, students learn about the four areas of development—physical, intellectual, social, and emotional. Additionally, they learn about the hierarchy of human needs and the idea that people grow and develop to meet these needs.

Students learn about genetics. They will learn about chromosomes and DNA and how these genetic materials contain hereditary information. They will learn about current genetic research that hopes to alleviate or eliminate the affects of genetic diseases.

Then students will learn more about aging. Students will look at how aging affects each of the major body systems. Students will also learn about the terminally ill patient. They will be introduced to the stages of grief and learn how to show support for the dying as a health care worker through each step. Finally, students will learn about the role of mortuary science and funeral homes when a patient dies. They will learn about the services offered by these organizations.

A journaling period and a class discussion on growth and development issues complete the unit. Students then fill-in a family tree and choose to interview a family member with a medical ailment, focusing on the family member's experiences with health care workers and facilities as well as the medical ailment. The class learns tips for building client relationships as each student presents information learned from the interview.

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## Key Questions

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*What do developmental tasks and health issues of life stages tell us about overall human growth and development?*

*As a health care worker, why is it important to understand the stages of grief?*

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## Highlights

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Developmental Tasks

Health Issues

Genetics

Death and Dying

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## Student Objectives:

- Describe DNA and its role in human heredity.
- Describe the role of human genetics in relation to genetic diseases.
- Identify current issues related to genetic research.
- Compare the aging process among the body systems.
- Describe the development of a fetus from conception to birth.
- Evaluate the effects of alcohol, controlled substances, and tobacco on a fetus.
- Identify developmental tasks and health issues for the neonate, infant, child, adolescent, adult, and geriatric age group.
- Identify the characteristics of different stages of human growth and development and their effects on communication.
- Identify human needs according to Maslow's Hierarchy of Human Needs
- Predict where and how an aging population may affect various health care delivery system models.
- Develop a basic understanding of human needs throughout the life-span.
- Explain basic concept of positive self image.
- Discuss characteristics and treatment of common eating disorders.
- Identify psychological reactions to illness, including defense mechanisms.
- Discuss death and dying.
- Recognize the stages of the grief process.
- Describe mortuary science.
- Discuss and describe services provided by funeral directors/funeral homes.
- Identify community support agencies for the terminally ill.



# Medical Mathematics

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## Unit Overview

Medical Mathematics reviews math skills frequently used by health care workers. In the Exploration, students complete a worksheet of medical math problems. Students have an opportunity to complete the same worksheet at the conclusion of the unit as proof of their increased understanding.

Students discover the importance of mathematics in daily living and explore strategies for overcoming math anxiety. Students then review basic numerical concepts, including whole numbers, decimals, fractions, and percentages. They practice key calculations using ratios and proportions. They also learn estimating techniques, such as rounding and averaging.

Students are introduced to measuring systems, and they learn how to measure using the household, metric, and apothecary systems. Students also practice converting between systems by using proportions.

Students learn to read labels and prescriptions. They use proportions to calculate dosage for oral and parenteral medication. They also calculate dosage according patient weight.

Next, students learn how temperature and time are used in health care. They use formulas to convert between Fahrenheit and Celsius. They also learn to add and subtract time, measure elapsed time, and use military time. Students also record an Intake and Output chart and a TPR graph.

As a Reflection, students use their journal to independently answer questions. The students then discuss their answers with the rest of the class.

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## Key Questions

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*Why is knowledge of mathematics essential for the health care worker?*

*What mathematical skills are used most frequently in health care jobs?*

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## Highlights

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Standard and Metric Conversion

Charting and Graphing

Ratios and Proportions

### Student Objectives:

- Record temperature, pulse, respiration, and blood pressure manually on graphic sheets accurately and timely.
- Draw, read, and report on graphs, charts and tables.
- Apply data from tables, charts, and graphs to estimate and find solutions to health-related problems
- Add, subtract, multiply, and divide rational numbers in health-related problems;
- Measure time, distance, and capacity.
- Convert from regular to 24 hour time.
- Make and use measurements in traditional units.
- Make and use measurements in metric units.
- Convert common weights, measures, and volumes to metric.
- Convert readings from Fahrenheit and centigrade.
- Calculate ratios.
- Make estimates and approximations and judge the reasonableness of the result.



# Wellness and Nutrition

## Unit Overview

The Wellness and Nutrition unit teaches the importance of wellness. In the Exploration, students observe a role-play regarding being “well.”

In the Learn & Practice, students learn about the five areas of holistic health – physical, emotional, social, mental and intellectual, and spiritual health. In addition, they learn about types of alternative therapies, how to evaluate them, and how they may affect health care systems.

Students then learn about factors of healthy living and nutrition. Students explore how MyPyramid helps people make nutritious, healthy food choices and be active. And they learn about types of therapeutic diets. Students learn that stress can be helpful or harmful. They also discover how to manage stress using stress-reducing techniques, a stress-resolution plan, and outside help.

Students learn about choosing health care providers. They also learn about prescription, over-the-counter, brand name, and generic medications. In addition, students explore what is involved in a physical examination. And they learn and practice the procedure for testing far vision. After learning about wellness, students create a wellness plan that they can use in their personal and professional life.

In the Reflection, students answer several open-ended questions and then discuss their answers with the class. Students create a board game to illustrate the rewards and consequences of making decisions. Students also create a persuasive poster on a wellness-related topic and present their topic to the class with an interactive activity that they develop.

## Key Questions

*What makes a person healthy?*

*Are you healthy?*

## Highlights

Wellness

Alternative Therapies

Nutrition

Stress-Management

Substance Abuse

HIV/AIDS

### Student Objectives:

- Predict where and how access to care may affect various health care delivery system models.
- Predict where and how alternative therapies may affect various health care delivery system models.
- Predict where and how lifestyle/behavior changes may affect various health care delivery system models.
- Define and discuss "Generic", over the counter, and brand name prescription drugs.
- Discuss how to select physicians, dentists, hospitals, and pharmacies according to individual needs.
- Apply safety precautions in the HSTE classroom, laboratory, and all clinical facilities that are utilized.
- Identify personal immunization status.
- Identify personal health practices that affect optimal function of each of the major body systems.
- Identify potential health hazards in lifestyles and life practices.
- Identify measures that promote wellness across the lifespan.
- Identify community resources for prevention and management of health problems.
- List ways one can obtain health screening/physical exams.
- Demonstrate Vision Screening.
- Use appropriate safety practices as related to high-risk behaviors.
- Explain basic concept of wellness.
- Analyze the function of nutrients.
- Demonstrate knowledge of the importance of adequate nutrition.
- Explain the nutrition pyramid.
- Demonstrate knowledge of typical, modified, and therapeutic diets.
- Develop a wellness and stress-control plan that can be used in personal and professional life.
- Define stress/stressors.
- Identify problem solving skills to resolve stress.
- Discuss various crises intervention services available in the local community.
- Identify risk factors for heart attack and stroke.
- Distinguish between fact and fallacy about the transmission of diseases caused by blood borne pathogens, including Hepatitis B.
- Identify community resources and services available to the individuals with diseases caused by blood borne pathogens.
- Identify "at risk" behaviors that promote the spread of diseases caused by blood borne pathogens.
- Identify the public education necessary to combat the spread of diseases caused by blood borne pathogens.
- Demonstrate knowledge of the legal aspects of AIDS, including testing.
- Perform procedures accurately in a timely manner
- Clean and properly maintain equipment and work area



# Client Status

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## Unit Overview

The Client Status unit teaches about the importance of vital signs and body measurement. The Exploration emphasizes practicing these procedures safely and accurately with a demonstration of the equipment.

In the Learn & Practice, students learn about the methods and equipment for taking temperature, pulse, respiration, and blood pressure. They learn the difference between palpation and auscultation and between radial and apical pulse. They understand that respiration is a vital sign that patients can control to some degree, and so they learn to measure respiration discreetly. Students practice documenting vital signs after the measurements have been taken.

After practicing vital signs, students learn about body measurements. They learn about height and weight, and for infants, head circumference. They learn about height-weight charts and growth charts. Then they learn and practice the procedure for taking and recording adult weight and height using a balance beam scale with a height bar.

In the Reflection, students consider several open-ended questions and write their responses in their journals. The class then discusses the issues raised in the questions and how they might react as health care workers.

Students have the opportunity to further practice vital sign measurements during a project that analyzes how vital signs are affected by different levels of exercises.

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## Key Questions

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*What might be understood about patients from their vital signs?*

*What might be understood about patients from their body measurements?*

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## Highlights

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Temperature

Pulse

Respiration

Blood Pressure

Height and Weight

### Student Objectives:

- Define and explain homeostasis.
- Compile and record client data
- Apply safety precautions in the HSTE classroom, laboratory, and all clinical facilities that are utilized.
- Identify normal range and average body temperature for oral, auxiliary, rectal, and tympanic measurement method.
- Identify common causes of variations in body temperature.
- Identify acceptable variations for normal range of body temperature.
- Identify variations from normal body temperature range that should be reported.
- Select the temperature measurement method appropriate for given situation.
- Measure and record temperature.
- Demonstrate the ability to read mercury and tympanic thermometers.
- Disinfect and store thermometers.
- Identify peripheral pulse sites.
- Identify criteria to use in selecting pulse site.
- Measure and record pulse using a variety of pulse sites.
- Identify normal pulse range for different age groups.
- Identify factors that may affect pulse rate.
- Identify variations from normal pulse range that should be reported.
- Analyze pulse deficits and report findings accurately.
- Differentiate between palpation and auscultation.
- Measure and record respiratory rate
- Identify normal respiratory rate for different age groups.
- Identify factors that may affect respiration.
- Identify common causes of variations in respiration.
- Measure and record blood pressure.
- Identify variations from normal respiration that should be reported.
- Identify normal blood pressure ranges for different age groups.
- Identify factors that may affect blood pressure.
- Identify common causes of variations in blood pressure.
- Identify variations from normal blood pressure ranges that should be reported.
- Identify normal height, weight ranges, and head circumference in both metric and English units for different age groups and different genders.
- Identify factors that may affect height, weight, and head circumference.
- Identify common causes of variations in height, weight, and head circumference.
- Identify variations from normal height, weight ranges, and head circumference that should be reported.
- Measure and record temperature using a variety of methods.
- Take and record mass/weight and height in various forms of measurement systems used in health care.
- Measure and record head circumference in metric and English units.



# Safety Precautions

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## Unit Overview

The Safety Precautions unit teaches about the importance of safety techniques in a health care facility. The unit begins with a role-play demonstrating the danger of not using safety precautions. Students then practice using principles of body mechanics to prevent injuries when lifting, pushing, pulling, or transferring objects or patients.

Students learn the meaning of several safety signs and symbols, and they will be able to explain the importance of good housekeeping and ergonomics. Students practice the appropriate steps for greeting and identifying patients. Students also explore food safety, fire safety, and chemical safety. They demonstrate how to follow an evacuation plan for a fire emergency, and they will identify the correct steps for operating a fire extinguisher. They also describe guidelines for fire prevention. Finally, students practice chemical safety by locating information on a materials safety data sheet and by identifying correct ways to handle chemical solutions.

After learning the basic safety techniques, students use the Internet to research safety regulations from OSHA, the FDA, and the EPA. Students also demonstrate how to report safety violations appropriately by filing an event report.

The Reflection includes independent journal time, followed by a discussion of safety-related issues. As a project, students work with a partner to develop a list of guidelines for various facets of everyday life.

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## Key Questions

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*What are safety precautions?*

*Why is it important to practice safety precautions in a health care facility?*

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## Highlights

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OSHA

Body Mechanics

Positioning and Transferring

Fire Safety

### Student Objectives:

- Practice personal and client safety
- Evaluate the need for safety precautions in the classroom, laboratory, and all clinical settings.
- Identify current Occupational Safety and Health Administration (OSHA), Environmental Protection Agency (EPA), Nuclear Regulatory Commission (NRC), and Federal Drug Administration (FDA) regulations.
- Identify legislation that mandates an employer's obligation to provide a safe workplace
- Manage a personal exposure incident in compliance with OSHA regulations.
- Identify and apply principles of body mechanics and ergonomics for patient and self.
- Demonstrate procedures for the safe transport and transfer of patients in the home.
- Demonstrate the procedure for properly identifying patients.
- Demonstrate methods of fire prevention in the health care setting.
- Demonstrate disaster preparedness procedures for emergency situation - fire emergency evacuation plan
- Identify common emergency codes used in healthcare facilities to notify staff of impending emergency procedures and acknowledges that these codes may vary in each facility utilized.
- Prevent accidents by using proper safety techniques.
- Practice good housekeeping by maintaining a safe work environment.
- Identify safety issues related to feeding/eating
- Identify legal implications of accidents in a health care facility.
- Recognize and report safety hazards.
- Identify environmental and safety rules of facility/agency.
- Identify references and resource materials related to infection control and hazards management.
- Adhere to hazardous labeling requirements.
- Comply with safety signs, symbols, and labels.
- Write incident report(s) documenting accidents or safety infractions in accordance with policies and procedures.
- Follow established procedures to safely operate commonly used equipment.
- Identify and practice security procedures for medical supplies and equipment.



# CPR Methods

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## Unit Overview

The CPR Methods unit guides students through basic life support skills. In the Exploration, the teacher demonstrates the use of the adult, child, and infant mannequins the students will use later in the unit.

In the Learn & Practice, students identify safety precautions that reduce the risks to the health care worker and the patient. They also discover when to call for medical help before starting care and when to give care immediately.

CPR is introduced in four steps: Airway, Breathe, Circulation, and Defibrillator. Students review the correct CPR procedures for one-person, two-person, rescues on adults, children, and infants.

In the next topic area, students learn the common causes and symptoms of choking. Students are instructed in the Heimlich maneuver for adults and children, and practice the hand-positioning with a partner. Students also practice back blows and chest thrusts for an infant airway obstruction. Students also apply the recovery position and determine when to stop giving care.

Students review the issues in the unit by writing in their journal. As a project for the unit, students select a health-care related article from the newspaper or a professional journal and write a summary of the article.

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## Key Questions

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*What is cardiopulmonary resuscitation?*

*What is choking and how does it relate to CPR?*

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## Highlights

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Basic Life Support

Cardiac Arrest

Automated External Defibrillator

Chain of Survival

Airway Obstructions

## Student Objectives:

- Perform skills in Basic Life Support
- Demonstrate the use of personal protective devices and the use of standard precautions for disease prevention during cardiopulmonary resuscitation (CPR).
- Differentiate between the definition of an infant and the definition of a child as related to emergency care
- Open obstructed airway of an infant and child (simulation).
- Perform one-person CPR on an adult (simulation).
- Perform one rescuer cardiopulmonary resuscitation on an infant and child (simulation)
- Identify when CPR may be discontinued once it has been initiated.
- Demonstrate rescue breathing for an infant and child (simulation).
- Demonstrate the recovery position for adults, infants, and children utilized in emergency situations.
- Discuss when automatic external defibrillator techniques are necessary.



# Emergency Care

## Unit Overview

In the Emergency Care unit, students learn how to assess an emergency situation and react appropriately. The unit begins with students observing a role-play of a health care worker in an emergency situation.

In the Learn & Practice, students explore bone and joint injuries and learn to make and apply slings, splints, and dressings. Students also learn ambulatory techniques using crutches.

Students learn the seriousness and types of shock. They identify shock symptoms and how to treat shock based on the cause. Students discover the types and classifications of wounds and burns. Students practice the procedures for open wounds and severe burns. Foreign bodies in the eye, ear, and nose are discussed, as are the signs and treatments for poisonings.

Sudden illnesses are a common emergency situation, and students learn to react when faced with heart attacks, strokes, diabetic reactions, and seizures and convulsions. Students also identify treatments for heat and cold related illnesses, such as hypothermia and heat exhaustion.

In the Reflection, students consider several open-ended questions and write their responses in their journals. The class then discusses the issues raised in the questions and how they might react as health care workers.

For more extensive practice of procedures, students participate in a small group scenario that calls for the students to react to a specific emergency situation.

## Key Questions

*Why is it important for health care workers to understand basic emergency care procedures?*

*What are the priority issues when providing emergency care?*

## Highlights

Shock

Wounds

Burns

Poisonings

Sudden Illnesses

Joint Injuries

Foreign Objects

### Student Objectives:

- Explain how the "Good Samaritan" Law protects the first responder in emergency situations.
- Demonstrate basic understanding of first aid and emergency care.
- Demonstrate appropriate actions in emergency situations.
- Recognize adverse drug related emergencies and take appropriate first aid action.
- Monitor and record vital signs during emergency care.
- Describe legal parameters relating to the administration of emergency care.
- Describe wounds and their treatment.
- Identify shock and treatment.
- Recognize types of poisoning and treatment.
- Identify classifications of burns and their appropriate treatment.
- Describe ill effects of heat and cold.
- Demonstrate first aid procedure for bone and joint injuries.
- Recognize the signs of heart attack.
- Recognize the signs of stroke.
- Recognize the signs of fainting and epilepsy.
- Demonstrate first aid procedure for sudden illness-convulsions/seizures.
- Recognize the signs of diabetic reactions.
- Describe first aid for foreign objects in the eye and ear.
- Determine when a doctor's care is necessary.
- Demonstrate activation of the emergency medical system (EMS).
- Demonstrate turning, positioning, transferring, and ambulatory techniques.



# Personal Qualities

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## Unit Overview

In the Personal Qualities unit, students discover the expected appearance and personal characteristics of the health care worker. Students begin the unit by identifying appropriate personal appearance and hygiene habits, including uniform, hair, jewelry, and makeup.

Students then discuss a number of personal traits belonging to successful health care workers. The importance of listening and precise communication is reiterated, along with the need for health care workers to practice integrity and honesty. Students learn that attendance is not optional in the workplace.

Students also learn to use time management techniques to achieve goals. They discuss ways of reevaluating goals when unexpected events occur. Students also set short-term and long-term goals for themselves.

Health care workers must know how to solve problems, and students practice dealing with workplace situations. Students explore the concept of teamwork and the traits of effective teams. Students identify the roles and responsibilities of team members and evaluate the effectiveness of several teams.

In the Reflection, students review the issues in the unit by writing in their journal and participating in a class discussion. As a project, students work in a small group to solve a health care problem. Students also note teamwork traits seen in their fellow students.

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## Key Questions

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*What personal qualities should all health care workers demonstrate?*

*Why is it important for health care workers to demonstrate positive personal qualities?*

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## Highlights

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Professional Appearance

Problem-Solving

Time-Management

Teamwork

### Student Objectives:

- Recognize the importance of courtesy and respect for patients and other health care workers and maintain good interpersonal relationships.
- Adapt to the dynamics of change.
- Discuss why many healthcare facilities require their employees to adhere to specific personal appearance codes.
- Adopt personal health, appearance, and hygiene habits appropriate to the health care environment and industry expectations.
- Wear appropriate identification (e.g., name tag) and uniform and/or professional attire according to agency policy, regulatory requirements, and federal and state licensing laws.
- Practice personal integrity and honesty.
- Evaluate work assignments and initiate action with confidence commensurate with work assignment.
- Exhibit respectful and empathetic behavior when interacting with peers, superiors, subordinates, and customers in one-on-one and group situations.
- Follow attendance policies of the employer or educational institution.
- Accept responsibility for own actions.
- Communicate in a straightforward, understandable, accurate, and timely manner.
- Listen attentively to verbal instruction, requests, and other information to verify accuracy.
- Develop skills and characteristics needed to meet professional goal.
- Manage time, prioritize responsibilities, and meet completion dates as specified by client and employer.
- Show enthusiasm and commitment by meeting expectations and priorities of the organization.
- Identify professional characteristics of health care providers
- Respect interdisciplinary roles of team members.
- Apply the team concept in providing quality patient care.
- Recognize characteristics of effective teams.
- Analyze roles of various team participants.
- Respond to given critical situations appropriately as a member of a team.
- Accept compromise as necessary to ensure a best outcome.
- Collaborate with others to formulate team objectives.
- Educate health care team members regarding health issues.
- Actively listen to other team members.
- Identify traits of a leader
- Respect and value the expertise and contributions of all team members.
- Work collaboratively with persons from diverse backgrounds to accomplish a common goal.
- Apply corrective action to effectively manage an acknowledged conflict situation.
- Exhibit a strong sense of team identity and commitment to purpose.
- Interact consistently within the facility guidelines and lines of authority.



# Health Care Careers

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## Unit Overview

In the Health Care Careers unit, students explore a variety of professions in the field of health sciences. In the Exploration, students discuss several job ads representing a variety of fields.

Students then explore the rewards and demands of being a health care worker. Students also discover different education levels and types of credentials required for health care careers. And they discuss the role of professional organizations and professional development play over the course of a career.

Students learn about how to choose a career. They discover that the key is to find a career that fits their interests, abilities, and needs. They are introduced to thinking of a career as a path or ladder. Students learn that to begin finding a career, they should research published materials as well as talk to others. And they examine what types of information to look for in their research.

Students apply their knowledge to explore at least one health care career, recording information about job description and working conditions, education and training, salary and wages, and job outlook. Students then select a career from the research and develop a Career Plan.

The Reflection includes a discussion of career-related topics. Students then learn from the research of others when each student presents information about the career they explored.

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## Key Questions

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*Why might a person choose a health care career?*

*How should a person prepare for a health care career?*

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## Highlights

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Education

Salary and Wages

Job Outlook

Career Plan

### Student Objectives:

- Solve problems and make decisions regarding employment using critical thinking skills (analyze, synthesize, evaluate) independently.
- Plan for career growth.
- Explain the importance of maintaining professional competence through continuing education.
- Identify professional development opportunities and requirements within the agency.
- Identify the role of professional organizations in the professional development process.
- Identify the purpose and benefits of belonging to professional organizations within the health field.
- Identify the benefits of belonging to civic and community organizations.
- Determine professional development needs.
- Develop a plan for meeting identified needs (e.g., through workshops, classes, professional reading).
- Differentiate between the roles/responsibilities of regulatory agencies and professional organizations.
- Explore a potential health science career path in diagnostic health care services.
- Explore a potential health science career path in therapeutic health care services.
- Explore a potential health science career path in health care information.
- Explore a potential health science career path in environmental health care services.
- Research levels of education for a health care service area.
- Identify availability of educational opportunities for different health professions.
- Consider credentialing requirements for a health care service area.
- Research employer expectations for various health occupations.
- Consider workplace environments for a health care service area.
- Investigate career growth potential for a health care service area/various health careers.
- Identify possible advancement patterns in health careers.
- Contrast certification, registration, and licensure.
- Explore specific health care interests (e.g., shadowing, worksite experiences, professional readings).
- Predict the impact of career decisions
- Identify laws related to employment in health care.
- Identify coping strategies, resources, and support persons to meet the psychosocial needs of the health care provider.
- Identify factors that explain why health occupations are emotionally and physically demanding.
- Identify careers that require computer knowledge in the health care setting.
- Relate the background of HOSA including purposes and principles of the organization creed, motto, emblem, and dress.



# Job Seeking Skills

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## Unit Overview

The Job Seeking Skills unit prepares students for the task of finding employment in the health care industry. The unit begins with a role-play of an ineffective interview.

In the Learn & Explore, students reflect on their criteria for a job and identify resources for discovering job openings in their desired field. Students also discuss employment laws, such as equal opportunity.

Students also practice completing an application for employment. Each section of the application is discussed and then filled-in by students. Application software is used by the students to create a resume. They learn how to prepare a resume for electronic mail or online posting. Students also learn how to structure a cover letter.

Next students research how to be prepared for an interview. Students use the Internet to find information on the company, dressing for an interview, when to arrive, and how and what to communicate. Students learn the importance of a follow-up letter. Students also identify how to resign from a position.

As a Reflection, students answer open-ended questions in their journals. The students then conduct mock interviews to practice their interviewing skills.

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## Key Questions

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*What process should a person use to obtain a job?*

*How can an applicant increase the chance of being hired for a job?*

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## Highlights

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Job Applications

Resumes

Cover Letters

Interviews

Resignations

### Student Objectives:

- Research employment opportunities for a health care service area.
- Locate and identify local job openings in health care.
- Secure information about a job.
- Identify documentation that may be required when applying for a job to obtain the position.
- Complete a job application form correctly.
- Prepare for a job interview.
- Dress appropriately for job interview.
- Demonstrate competence in job interview techniques.
- Present credentials, philosophy, and goals in job interview for a health employment position.
- Demonstrate knowledge of how to make job changes appropriately.
- Write an appropriate resume.
- Compile documents needed for obtaining a position.
- Update documents needed for health employment.
- Analyze personnel policies and procedures.

