

# Health and Medical Sciences

## Exploratory

**8369 9 weeks / 8370 18 weeks / 8371 36 weeks**

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## Course Description

**Suggested Grade Level:** 6 or 7 or 8

Students explore health and medical sciences careers and related clusters, participate in interactive activities, and receive an overview of the healthcare industry. Course content includes the criteria for entering various healthcare careers. Students gain communication, problem solving, and critical thinking skills.

# Task Essentials Table

- Tasks/competencies designated by plus icons (+) in the left-hand column(s) are essential
- Tasks/competencies designated by empty-circle icons (○) are optional
- Tasks/competencies designated by minus icons (−) are omitted
- Tasks marked with an asterisk (\*) are sensitive.

8370	8369	8371	Tasks/Competencies
<b>Gaining an Overview of the Healthcare Industry</b>			
+	+	+	Identify major factors influencing health care.
○	○	+	Summarize current research trends in health and medical science.
+	○	+	Research issues affecting the future of health care.
○	○	○	Present issues affecting the future of health care.
+	○	+	Define common medical terms used in the healthcare profession.
+	+	+	Define common medical equipment and interventions used in the healthcare profession.
+	+	+	Identify major healthcare delivery systems.
+	+	+	Identify milestones and outstanding figures in healthcare history.
<b>Exploring Health Care as a Career</b>			
○	+	+	Identify personal qualities typically needed for healthcare careers.
+	○	+	Identify professional work practices specific to the healthcare worker.
+	+	+	Examine the importance of ethics as related to the healthcare worker.
+	+	+	Investigate career opportunities available in health and medical science.
+	○	+	Set career goals in light of personal strengths, weaknesses, and interests.
+	+	+	Describe the educational and licensure limitations related to health science careers.
+	+	+	Identify Virginia's health professional boards.
<b>Examining Effects on Healthcare Consumers</b>			
+	+	+	Describe ideal health practices.
+	○	+	Compare the types, purposes, and costs of healthcare insurance.
+	+	+	Identify the leading causes of death in the United States.
+	○	+	Describe the effects of the increasing human life expectancy on health care.
+	+	+	Explain how diversity influences individual health care in the United States.
○	○	+	Describe the effects of marketing techniques that influence healthcare consumers.
<b>Examining the Importance of Safety and Quality in the Healthcare Industry</b>			
+	+	+	Identify safety regulations specific to health care.
+	○	+	Identify national and state agencies responsible for maintaining public health and safety.
+	+	+	Identify local community agencies that address health issues.
○	○	+	Identify national nonprofit organizations that provide research, health education, and resources.

8370	8369	8371	Tasks/Competencies
<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	Demonstrate the use of personal protective equipment (PPE).
<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	Demonstrate hand hygiene techniques.
<b>Demonstrating Safety</b>			
<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	Explore body mechanics in lifting, pulling, and pushing.
<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	Demonstrate body mechanics as it relates to the musculoskeletal system.
<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	Explain fire safety procedures.
<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	Describe the purposes and methods of medical asepsis.
<b>Practicing First-Aid Techniques</b>			
<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	Explain appropriate first aid.
<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	Explain one-rescuer cardiopulmonary resuscitation (CPR) on an adult or child.
<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	Demonstrate one-rescuer cardiopulmonary resuscitation (CPR) on an adult or child.
<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	Explain foreign body airway obstruction (FBAO) procedures for a conscious and unconscious adult and child.
<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	Demonstrate foreign body airway obstruction (FBAO) procedures for a conscious and unconscious adult and child.
<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	Explain infant resuscitation.
<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	Demonstrate infant resuscitation.
<input checked="" type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	Explain foreign body airway obstruction (FBAO) procedures for a choking conscious and unconscious infant.
<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	Demonstrate foreign body airway obstruction (FBAO) procedures for a choking conscious and unconscious infant.

Legend:  Essential  Non-essential  Omitted

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## Curriculum Framework

### Gaining an Overview of the Healthcare Industry

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#### Task Number 31

**Identify major factors influencing health care.**

**Definition**

Identification should include factors such as

- decrease in death rate
- increase in aging population
- use of medical asepsis
- increase in chronic diseases
- environmental effects on humans
- changes in lifestyle
- new technologies
- personal access to health care
- consumer rights
- economic forces (e.g., competition, supply and demand).

### **Process/Skill Questions**

- How can knowledge of medical asepsis be useful to the individual consumer?
- How have environmental influences affected health care in the United States? In the world?
- Why has the aging population increased at a greater proportion in recent years? How has this affected the healthcare field?
- How do payment issues (e.g., healthcare reform, private insurance vs. public assistance) influence care delivery?

## **Task Number 32**

### **Summarize current research trends in health and medical science.**

#### **Definition**

Summary should include trends and technologies, including but not limited to

- genomics
- stem-cell research
- cloning
- robotics
- use of 3D printers
- telehealth (e.g., apps, virtual appointments, handheld devices).

### **Process/Skill Questions**

- What are current trends in healthcare delivery, policy, and research? How will such trends affect the future of health care?

- How have trends in healthcare delivery, policy, and research affected activities of daily living?
- How have trends in healthcare delivery, policy, and research affected those in healthcare careers?

## **HOSA Competitive Events (Middle School)**

### **Exploring Medical Innovation**

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## **Task Number 33**

### **Research issues affecting the future of health care.**

#### **Definition**

Research should include issues such as the shortage of healthcare educators and professionals, technological advances, global healthcare issues (e.g., pandemics, epidemiology), medical ethics, economic issues, and others.

#### **Process/Skill Questions**

- Why is there a shortage of healthcare professionals in some areas of medicine? What are the potential long-range effects of this shortage? What can be done now to ensure quality health care for future generations?
- How is globalization affecting health care in the United States? In the rest of the world? What are some potential results if this trend continues?
- What are some current issues in medical ethics? What are their long-term implications?
- How do today's economic challenges affect the healthcare consumer?

## **HOSA Competitive Events (Middle School)**

### **Exploring Medical Innovation**

#### **Public Health**

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## **Task Number 34**

### **Present issues affecting the future of health care.**

#### **Definition**

Presentation should include but not be limited to

- the shortage of healthcare educators
- the shortage of primary-care providers
- technological advances
- global healthcare issues (e.g., pandemics, epidemiology)
- medical ethics
- economic issues.

### **Process/Skill Questions**

- What is an emerging issue in health care? How will it influence the future of health care?
- What is the role of the Centers for Disease Control and Prevention (CDC), the World Health Organization (WHO), and Doctors Without Borders in managing and responding to global healthcare issues?

### **HOSA Competitive Events (Middle School)**

**Exploring Medical Innovation**  
**Health Education**  
**Public Health**

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## **Task Number 35**

### **Define common medical terms used in the healthcare profession.**

#### **Definition**

Definition should include

- basic human body systems and functions
- common abbreviations and acronyms
- common medical prefixes, suffixes, and root words.

### **Process/Skill Questions**

- What is personal protective equipment (PPE)?
- What is a prefix? Suffix? Root word?
- What are some medical abbreviations that you have heard?

### **HOSA Competitive Events (Middle School)**

## Task Number 36

### Define common medical equipment and interventions used in the healthcare profession.

#### Definition

Definition should include

- basic medical equipment (e.g., blood pressure cuff, thermometer, stethoscope)
- basic medical interventions (e.g., colonoscopy, electrocardiogram, root canal, cultures).

#### Process/Skill Questions

- What is a bypass?
- What is basic medical equipment?
- What devices can be used to check pulse?
- What is the difference between “medical” and “surgical”?
- What medical equipment is used for assessing vital signs?

### HOSA Competitive Events (Middle School)

## Task Number 37

### Identify major healthcare delivery systems.

#### Definition

Identification should include delivery systems such as hospitals, emergency medical care and ambulances, school nurse offices, physician offices, pharmacies, urgent-care centers, home health care, long-term care, hospice and palliative care, behavioral health care, community health centers, and others.

#### Process/Skill Questions

- What are the similarities and differences among urgent-care centers, hospital emergency rooms, and physicians’ offices?

- Why has the interest in home health care increased in recent years? How is this interest evident?
- Can an emergency medical technology (EMT) team administer medicine? Why, or why not?

## **Task Number 38**

### **Identify milestones and outstanding figures in healthcare history.**

#### **Definition**

Identification should include major events (e.g., inventions, discoveries) and key contributors to medical science and practice from ancient times to today.

#### **Process/Skill Questions**

- What is the Hippocratic Oath? How is it violated? Why is it still important in the medical profession?
- Why was the invention of the microscope a critical event in medical history? What other inventions have been groundbreaking in medical history? Why was each important?
- What figures have been notable in the history of health care? How do their contributions affect human life in the 21st century?
- How has technology affected the field of medicine in recent years?
- What are some emerging technologies, and how will they advance the healthcare field?
- What is a consequence of replacing human healthcare workers with technology?

### **HOSA Competitive Events (Middle School)**

#### **Health Career Exploration**

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## **Exploring Health Care as a Career**

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## **Task Number 39**

### **Identify personal qualities typically needed for healthcare careers.**

#### **Definition**

Identification should include the physical, mental, and behavioral characteristics typically needed for healthcare careers.

### **Process/Skill Questions**

- What professional attitudes do you want to see in your healthcare provider?
- In what ways do different healthcare settings require workers with different personal qualities? How can this affect career choice?
- What personal qualities do you possess that reflect the characteristics that a health professional should have?

### **HOSA Competitive Events (Middle School)**

**Health Career Display**  
**Health Career Exploration**

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## **Task Number 40**

### **Identify professional work practices specific to the healthcare worker.**

#### **Definition**

Identification should include

- ensuring safe and reliable healthcare delivery
- maintaining patient rights
- maintaining the code of ethics
- maintaining continuity of patient care
- upholding health-related laws such as the Health Insurance Portability and Accountability Act (HIPAA) and Omnibus Budget Reconciliation Act of 1990, as related to confidentiality of medical records, scope of practice, and patient rights
- focusing on customer service and quality
- modeling interprofessional practice.

### **Process/Skill Questions**

- What behaviors can cause an employee to lose a healthcare job?
- What are five ways to maintain patient confidentiality?
- How does hacking affect maintaining patient confidentiality?
- How is continuity of patient care maintained upon discharge from the hospital?

### **HOSA Competitive Events (Middle School)**

## Task Number 41

### Examine the importance of ethics as related to the healthcare worker.

#### Definition

Examination should include

- explaining the concept of personal and professional ethics
- giving examples of ethical issues (e.g., confidentiality, access to care, euthanasia, organ donation, genetic research)
- adhering to professional standards of practice
- describing potential consequences of unethical behavior in the healthcare environment.

#### Process/Skill Questions

- What is a professional code of ethics? What is an example in the healthcare field?
- Why do healthcare professions develop and value a code of ethics?
- How can a professional code of ethics affect patient care?
- How can a healthcare worker's personal beliefs influence healthcare delivery?
- What current topics involve medical ethics issues?

## Task Number 42

### Investigate career opportunities available in health and medical science.

#### Definition

Investigation for each teacher- or student-selected career pathway should include the

- scope of practice (i.e., specific job tasks and responsibilities)
- settings and populations, preapplication requirements for program of interest, and educational requirements
- wages and earning potential
- certification/licensing requirements
- career ladder
- advantages and disadvantages

- related professional organizations and publications.

### **Process/Skill Questions**

- What classes should you take to pursue your chosen career pathway?
- What education is needed for different levels of healthcare positions?
- What are the career benefits of participating in HOSA? In professional healthcare organizations?
- What is a career ladder? What career ladders are available in local hospitals?
- What is a potential healthcare career that you may be interested in? What level of education do you need to reach this goal? What classes should you take in middle and high school to prepare for your future goals?
- What specific tasks and responsibilities make this particular healthcare profession interesting to you?

### **HOSA Competitive Events (Middle School)**

**Health Career Display**  
**Health Career Exploration**

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## **Task Number 43**

### **Set career goals in light of personal strengths, weaknesses, and interests.**

#### **Definition**

Setting goals should include the use of a self-inventory for career exploration, such as a career planning system (e.g., [Virginia Wizard](#), [Virginia Career VIEW](#)).

### **Process/Skill Questions**

- What careers did your self-inventory suggest? What personal strengths and weaknesses did your self-inventory reveal?
- Do you agree with the results of your self-inventory? Why, or why not?
- How can a self-inventory lead to self-improvement? How can it lead to successful job placement?
- What are some other characteristics that were not considered in the self-inventory that are important to consider when making career decisions?

### **HOSA Competitive Events (Middle School)**

**Health Career Exploration**

## Task Number 44

**Describe the educational and licensure limitations related to health science careers.**

### Definition

Description should include educational requirements, certifications and licensure, and regulations specific to health and medical sciences careers.

### Process/Skill Questions

- What are the educational requirements for a health profession of interest?
- What is "scope of practice"? How does licensure protect receivers of health care?
- What are the consequences when an individual violates regulations related to the scope of practice?

### HOSA Competitive Events (Middle School)

Health Career Exploration  
Health Career Preparation

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## Task Number 45

**Identify Virginia's health professional boards.**

### Definition

Identification should include boards such as the

- Board of Dentistry
- Board of Medicine
- Board of Nursing
- Board of Optometry
- Board of Pharmacy
- Board of Physical Therapy.

See the Web sites for the [Virginia Department of Health Professions](#) and the [Virginia Department of Health](#) for more information.

## Process/Skill Questions

- What are the certification, licensure, and regulatory processes that demonstrate required skills, and competencies, and thereby promote consumer protection?
- What are specific professions covered under each health professional board in Virginia? Why do these boards regulate these professions?
- What can a medical professional or consumer do if they believe that a health professional board has acted in error? Can the decision be appealed? Explain.

## HOSA Competitive Events (Middle School)

Health Career Exploration  
Health Career Preparation

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# Examining Effects on Healthcare Consumers

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## Task Number 46

### Describe ideal health practices.

#### Definition

Description should include

- a nutritious diet
- healthy sleep habits
- oral and personal hygiene
- regular exercise
- health coaching
- stress management
- health campaigns
- health-related apps/technologies (e.g., wearable, personal health trackers) and other positive lifestyle choices.

## Process/Skill Questions

- What do you do to stay healthy? How can you improve your personal health?
- What is meant by "positive lifestyle choices"? How can making positive lifestyle choices affect your future?
- How might the healthcare industry be affected if all citizens made positive lifestyle choices? Negative lifestyle choices?

- What is a fad diet? What are the most reliable resources for nutritious diet information?

## **HOSA Competitive Events (Middle School)**

**Health Career Exploration**

**Health Career Preparation**

**Healthy Lifestyle**

**Nutrition**

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## **Task Number 47**

### **Compare the types, purposes, and costs of healthcare insurance.**

#### **Definition**

Comparison should include the following types and purposes:

- Government
  - Affordable Care Act
  - Medicare
  - Medicaid
  - TRICARE (for the armed forces)
  - Workers' compensation
  - FMLA
- Private
  - Health maintenance organizations (HMOs)
  - Preferred provider organizations (PPOs)

#### **Process/Skill Questions**

- What kind of healthcare insurance are you covered by?
- What is the difference between Medicare and Medicaid?
- What is a co-payment? A premium? A deductible? How do they differ from one another?
- Who pays for government healthcare insurance policies (e.g., Medicare, Medicaid, TRICARE)? How is it paid for?
- How do patients qualify for Medicare and Medicaid in Virginia?
- What Affordable Care Act issues concern you?
- What is a pre-existing condition?

## **Task Number 48**

## **Identify the leading causes of death in the United States.**

### **Definition**

Identification should include the leading causes of death across the lifespan.

Examples include

- heart disease
- cancer
- suicide
- drug addiction/overdose (opiates).

### **Process/Skill Questions**

- How have the leading causes of death in the United States changed over the past 20 years? Why?
- What has been done in the past 50 years to reduce deaths from automobile accidents? From cardiovascular disease? From cancer? From pulmonary disease? From communicable diseases?
- How do lifestyle choices affect public health in the United States?
- How does death rate differ among countries?

## **Task Number 49**

### **Describe the effects of the increasing human life expectancy on health care.**

#### **Definition**

Description should include

- healthcare advances' effects on human life expectancy
- effects of the extended human life expectancy on health care, including
  - access to a higher quality of life for a larger percentage of the population
  - increase in the number of productive years for a larger portion of the population, benefiting the individual and the greater economy
  - prolonged less-than-quality life for persons with chronic conditions or diseases
  - higher public and private costs for medical and related care, staffing, equipment, and facilities.

#### **Process/Skill Questions**

- Why are humans living longer?

- How long do you expect to live? Why?
- What is meant by “quality of life”? How is quality of life affected by chronic diseases? How is quality of life affected by the aging process?
- How do personal lifestyle choices affect longevity?
- In the future, who will take care of people who can no longer take care of themselves? How will this be paid for?

## **HOSA Competitive Events (Middle School)**

### **Exploring Medical Innovation**

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## **Task Number 50**

### **Explain how diversity influences individual health care in the United States.**

#### **Definition**

Explanation should include major groups in the United States, and health beliefs and disparities commonly associated with each, including

- religion and cultural preferences
- ethnicity
- gender identification
- geographic location (e.g., rural, urban)
- occupational groups (e.g., veterans, coal miners)
- socioeconomic status.

#### **Process/Skill Questions**

- What are the most common ethnic groups in the United States? What are the basic health concepts of each?
- How are your own healthcare beliefs (e.g., about food, illness, medicine) different from or similar to those associated with major U.S. ethnic groups? How did you acquire your beliefs?
- Why is it essential for healthcare providers to be sensitive to cultural differences among patients? Among members of the healthcare team?
- What are some global healthcare disparities?
- Why do healthcare disparities exist?
- What are some healthcare discrepancies that exist in the United States?

## **Task Number 51**

## **Describe the effects of marketing techniques that influence healthcare consumers.**

### **Definition**

Description should include positive and negative effects of marketing:

- Positive—Results in a more informed society (as related to positive healthcare practices, recognition of disease, advances in medical products and services)
  - reader-friendly
  - age-appropriate
  - written in layman's terminology
- Negative—Encourages consumers to purchase services or materials that may be unnecessary or harmful

### **Process/Skill Questions**

- How does media (social media, print, and television) effect consumers' healthcare decisions?
- What are examples of public service announcements that focus on health care?
- What are political and financial influences on healthcare marketing?

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# **Examining the Importance of Safety and Quality in the Healthcare Industry**

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## **Task Number 52**

### **Identify safety regulations specific to health care.**

#### **Definition**

Identification should include safety regulations such as those dealing with Standard Precautions, as well as

- blood-borne pathogens
- hazardous chemicals
- radiation
- other hazards encountered in daily patient care.

## Process/Skill Questions

- How do various safety standards protect healthcare workers? How do they protect patients?
- What are Standard Precautions? When are they used?

## HOSA Competitive Events (Middle School)

### Public Health

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## Task Number 53

### Identify national and state agencies responsible for maintaining public health and safety.

#### Definition

Identification should include agencies such as

- [Occupational Safety and Health Administration](#) (OSHA)
- [National Institutes of Health](#) (NIH)
- [Centers for Disease Control and Prevention](#) (CDC)
- [American Academy of Pediatrics](#) (e.g., for immunizations)
- [U.S. Department of Health and Human Services](#)
- [U.S. Food and Drug Administration](#) (FDA)
- [U.S. Environmental Protection Agency](#) (EPA)
- [U.S. Drug Enforcement Administration](#) (DEA)
- [National Institute for Occupational Safety and Health](#) (NIOSH)
- [Virginia Department of Health](#)
- [Virginia Medical Reserve Corps](#) (MRC).

## Process/Skill Questions

- What safety information is available from the National Institutes of Health (NIH)?
- Why are there so many regulatory agencies?
- What diseases are required to be reported by the CDC? Why?
- How does the FDA protect our health?
- What is a REAL ID? How does it help to ensure public health and safety?
- What precautions should be taken when traveling overseas to address public health and safety?

## HOSA Competitive Events (Middle School)

## Task Number 54

### Identify local community agencies that address health issues.

#### Definition

Identification should include agencies such as

- community faith-based organizations
- food pantries
- cooperative extension
- homeless shelters
- free clinics
- area health education centers
- Remote Area Medical Services (RAM) clinics.

#### Process/Skill Questions

- What health-related services do local community agencies provide?
- Which local agencies provide health-related services in your community?
- What is a nonprofit organization?
- What are some local community events that provide health screenings, common health services, and healthcare equipment?
- What efforts are being taken to address food accessibility, including food deserts?

### HOSA Competitive Events (Middle School)

## Task Number 55

### Identify national nonprofit organizations that provide research, health education, and resources.

#### Definition

Identification should include agencies such as

- [American Cancer Society](#)

- [Autism Speaks](#)
- [American Diabetes Association](#)
- [National Alliance on Mental Illness](#)
- [March of Dimes](#)
- [National Multiple Sclerosis Society.](#)

### **Process/Skill Questions**

- What is the purpose and focus of various national nonprofit organizations that provide research, health education, and resources?
- What services do various national nonprofit organizations that provide research, health education, and resources provide?
- What local events do various national nonprofit organizations that provide research, health education, and resources hold for fundraising purposes?
- What is this year's HOSA service project?

### **HOSA Competitive Events (Middle School)**

#### **Public Health**

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## **Task Number 56**

### **Demonstrate the use of personal protective equipment (PPE).**

#### **Definition**

Demonstration should include donning and removing gowns, gloves, and masks.

#### **Process/Skill Questions**

- What is PPE?
- What is the proper technique for removing gloves?
- What is the proper sequence of donning and removing PPE? What is its significance?

### **HOSA Competitive Events (Middle School)**

#### **Life Threatening Situations Public Health**

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## **Task Number 57**

## **Demonstrate hand hygiene techniques.**

### **Definition**

Demonstration should include all steps in the healthcare industry-accepted hand hygiene procedures. *Note: Demonstration does not include hand washing for surgical asepsis.*

### **Process/Skill Questions**

- What is the minimum number of seconds a person should spend washing hands?
  - Why is it critical not to lean against or touch the sink when washing hands?
  - Why is cleaning fingernails an essential part of washing hands?
  - What is the difference between aseptic hand hygiene and surgical hand hygiene?
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## **Demonstrating Safety**

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### **Task Number 58**

## **Explore body mechanics in lifting, pulling, and pushing.**

### **Definition**

Exploration as it relates to the musculoskeletal system should include

- safe lifting practices
- pulling practices
- pushing practices

used in all aspects of health care.

### **Process/Skill Questions**

- What is the definition of *proper body mechanics*?
- What major muscles do you use to push and pull patients?
- How many healthcare providers are injured on the job annually due to poor body mechanics?

### **Task Number 59**

## **Demonstrate body mechanics as it relates to the musculoskeletal system.**

### **Definition**

Demonstration should include

- safe lifting practices
- pulling practices
- pushing practices

used in all aspects of health care.

### **Process/Skill Questions**

- What is the most common injury experienced by healthcare professionals? Why?
- What can a healthcare worker do to prevent back injuries?

## **Task Number 60**

### **Explain fire safety procedures.**

#### **Definition**

Explanation should include

- RACE (i.e., rescue, alarm, contain, and extinguish) procedures
- PASS (i.e., pull, aim, squeeze, and sweep) procedures.

#### **Process/Skill Questions**

- Why is it critical for a healthcare professional to know what to do in case of fire? Why is it important for private citizens to know what to do in case of fire?
- Why must special precautions be taken when oxygen is in use?
- How can defective electrical equipment lead to fire?
- Where are the nearest fire extinguishers in the classroom or lab?
- What are the major types of fire extinguishers? In what situations should each be used?

## **Task Number 61**

### **Describe the purposes and methods of medical asepsis.**

#### **Definition**

Description should include

- purposes of asepsis, such as
  - disease prevention
  - disease control
  - public health
- methods of asepsis, such as
  - hand washing
  - use of personal protective equipment (PPE)
  - safe handling of contaminated material
  - isolation techniques.

### **Process/Skill Questions**

- What is medical asepsis?
  - How would a healthcare worker implement standard precautions?
  - How should a healthcare worker dispose of a bloody bandage? Why?
  - What is personal protective equipment (PPE)? When should it be used?
  - What type of isolation precaution is used with a tuberculosis patient? Why?
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## **Practicing First-Aid Techniques**

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### **Task Number 62**

#### **Explain appropriate first aid.**

##### **Definition**

Explanation should include a physiological understanding, along with recognition of signs and symptoms, in order to treat the following:

- Medical emergencies
- Major/minor wounds
- Burns of all classifications
- Heat and cold exposure
- Bone/joint injuries
- Dental injuries

### **Process/Skill Questions**

- What are some medical emergencies?
- What is shock?
- What are the stages of burns?
- What is the proper medical intervention for various injuries/emergencies?

## **HOSA Competitive Events (Middle School)**

### **Life Threatening Situations**

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## **Task Number 63**

### **Explain one-rescuer cardiopulmonary resuscitation (CPR) on an adult or child.**

#### **Definition**

Explanation should be in accordance with American Red Cross or American Heart Association guidelines.

#### **Process/Skill Questions**

- What is the definition of an adult and a child, according to guidelines?
- How do you perform CPR?
- How do you know when to perform CPR?
- When and how do you activate the emergency response system?
- What pulse should you check? What pulse site should you check?
- What is the compression-to-breathing ratio?

## **HOSA Competitive Events (Middle School)**

### **Life Threatening Situations**

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## **Task Number 64**

### **Demonstrate one-rescuer cardiopulmonary resuscitation (CPR) on an adult or child.**

#### **Definition**

Demonstration should be in accordance with American Red Cross or American Heart Association guidelines.

## **Process/Skill Questions**

- Why should everyone, even upper level elementary-age children, be trained in CPR?
- What is an automated external defibrillator (AED)?
- What is the importance of using an AED? When should it be used? When should it not be used?
- Where is the location of the nearest AED to the classroom or lab?
- When administering CPR, how far should the CPR provider depress the chest of an adult? Of a child? Why?

## **HOSA Competitive Events (Middle School)**

### **Life Threatening Situations**

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## **Task Number 65**

### **Explain foreign body airway obstruction (FBAO) procedures for a conscious and unconscious adult and child.**

#### **Definition**

Explanation should be in accordance with American Red Cross or American Heart Association guidelines.

#### **Process/Skill Questions**

- What is the universal sign of choking?
- What are some choking prevention steps for a young child? What items cause choking?
- Where is proper hand placement for a conscious choking victim?

## **HOSA Competitive Events (Middle School)**

### **Life Threatening Situations**

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## **Task Number 66**

### **Demonstrate foreign body airway obstruction (FBAO) procedures for a conscious and unconscious adult and child.**

#### **Definition**

Demonstration should be in accordance with American Red Cross or American Heart Association guidelines.

### **Process/Skill Questions**

- What are signs and symptoms of choking? What is the universal sign for choking?
- What should be done if the choking victim is pregnant?
- What are the differences between procedures for assisting a choking adult and those for assisting a choking child?
- What are the differences in procedures for conscious and unconscious choking victims (child and adult)?
- In a choking situation, when should emergency medical services (EMS) be initiated?

### **HOSA Competitive Events (Middle School)**

#### **Life Threatening Situations**

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## **Task Number 67**

### **Explain infant resuscitation.**

#### **Definition**

Explanation should be in accordance with American Red Cross or American Heart Association guidelines.

#### **Process/Skill Questions**

- What is the definition of an infant, according to AHA guidelines?
- How does one determine responsiveness?

### **HOSA Competitive Events (Middle School)**

#### **Life Threatening Situations**

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## **Task Number 68**

### **Demonstrate infant resuscitation.**

#### **Definition**

Demonstration should be in accordance with American Red Cross or American Heart Association guidelines.

### **Process/Skill Questions**

- What are the signs that an infant is in need of resuscitation?
- What are the differences between CPR for an adult and CPR for an infant?
- In a case where resuscitation is needed, when should EMS be initiated?

### **HOSA Competitive Events (Middle School)**

#### **Life Threatening Situations**

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## **Task Number 69**

### **Explain foreign body airway obstruction (FBAO) procedures for a choking conscious and unconscious infant.**

#### **Definition**

Explanation should be in accordance with American Red Cross or American Heart Association guidelines.

#### **Process/Skill Questions**

- What is the definition of an infant, according to AHA guidelines?
- How do you know an infant is choking?
- What are the signs and symptoms of choking for an infant?
- What do infants choke on? How can infant choking be prevented?
- Why is it essential medical practice for a potential care provider not to attempt removal of an object that he/she cannot see?
- What is the difference in the proper choking intervention for an infant? Child? Adult?

### **HOSA Competitive Events (Middle School)**

#### **Life Threatening Situations**

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## **Task Number 70**

### **Demonstrate foreign body airway obstruction (FBAO) procedures for a choking conscious and unconscious infant.**

## Definition

Demonstration should be in accordance with American Red Cross or American Heart Association guidelines.

## Process/Skill Questions

- What are the proper steps to relieve choking in an infant?
- How do you recognize when an infant has become unconscious?
- What are the next steps when an infant becomes unconscious?
- In a choking situation, when do you activate EMS?

## HOSA Competitive Events (Middle School)

### Life Threatening Situations

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# SOL Correlation by Task

Identify major factors influencing health care.	English: 6.6, 7.6, 8.6  History and Social Science: CE.3, CE.11, CE.12, GOVT.7, GOVT.8, GOVT.9, GOVT.12, VUS.8, VUS.14, WG.17, WG.18, WHI.2, WHI.3, WHI.10, WHIL.4, WHIL.8, WHIL.9, WHIL.14
Summarize current research trends in health and medical science.	English: 6.6, 7.6, 8.6  History and Social Science: VUS.14, WG.17, WHIL.14  Science: LS.1
Research issues affecting the future of health care.	English: 6.9, 7.9, 8.9  History and Social Science: CE.3, CE.14
Present issues affecting the future of health care.	English: 6.2, 7.1, 8.2  History and Social Science: VUS.14, WG.17, WHIL.14
Define common medical terms used in the healthcare profession.	English: 6.4, 7.4, 8.4  History and Social Science: WHI.5, WHI.6, WHIL.4  Science: LS.3

Define common medical equipment and interventions used in the healthcare profession.	English: 6.4, 7.4, 8.4 History and Social Science: WHII.4
Identify major healthcare delivery systems.	English: 6.6, 7.6, 8.6
Identify milestones and outstanding figures in healthcare history.	English: 6.6, 7.6, 8.6 History and Social Science: USII.9, WHI.5, WHI.6, WHI.10, WHI.15, WHII.2, WHII.3, WHII.4
Identify personal qualities typically needed for healthcare careers.	English: 6.6, 7.6, 8.6 History and Social Science: CE.4, CE.14
Identify professional work practices specific to the healthcare worker.	English: 6.6, 7.6, 8.6 History and Social Science: CE.4, CE.14, VUS.13, VUS.14, WG.17, WHII.14
Examine the importance of ethics as related to the healthcare worker.	English: 6.6, 7.6, 8.6 History and Social Science: CE.4, CE.14
Investigate career opportunities available in health and medical science.	English: 6.6, 6.9, 7.6, 7.9, 8.6, 8.9 History and Social Science: CE.14
Set career goals in light of personal strengths, weaknesses, and interests.	English: 6.9, 7.9, 8.9 History and Social Science: GOVT.8
Describe the educational and licensure limitations related to health science careers.	English: 6.6, 7.6, 8.6 History and Social Science: CE.7, GOVT.7, GOVT.8
Identify Virginia's health professional boards.	English: 6.6, 7.6, 8.6 History and Social Science: CE.7, CE.9, GOVT.7, GOVT.8, GOVT.14, GOVT.15
Describe ideal health practices.	English: 6.6, 7.6, 8.6
Compare the types, purposes, and costs of healthcare insurance.	English: 6.6, 7.6, 8.6 History and Social Science: CE.13, CE.14, GOVT.7, GOVT.8, GOVT.9, GOVT.14, GOVT.15, VUS.13, VUS.14
Identify the leading causes of death in the United States.	English: 6.6, 7.6, 8.6 History and Social Science: GOVT.9, VUS.14, WG.17, WHII.14
Describe the effects of the increasing human life expectancy on health care.	English: 6.6, 7.6, 8.6

	History and Social Science: GOVT.7, GOVT.8, GOVT.9, GOVT.14, GOVT.15, VUS.14, WG.17, WHII.14
Explain how diversity influences individual health care in the United States.	English: 6.6, 7.6, 8.6 History and Social Science: CE.3, CE.4, GOVT.7, GOVT.8, GOVT.9
Describe the effects of marketing techniques that influence healthcare consumers.	English: 6.6, 7.6, 8.6 History and Social Science: CE.11
Identify safety regulations specific to health care.	English: 6.6, 7.6, 8.6 History and Social Science: CE.6, CE.9, GOVT.9, VUS.8, WHII.8
Identify national and state agencies responsible for maintaining public health and safety.	English: 6.6, 7.6, 8.6 History and Social Science: CE.6, CE.9, GOVT.7, GOVT.8, GOVT.9, GOVT.14, GOVT.15, VUS.13, VUS.14
Identify local community agencies that address health issues.	English: 6.6, 7.6, 8.6 History and Social Science: CE.9, GOVT.8
Identify national nonprofit organizations that provide research, health education, and resources.	English: 6.6, 6.9, 7.6, 7.9, 8.6, 8.9 History and Social Science: CE.9, GOVT.9
Demonstrate the use of personal protective equipment (PPE).	English: 6.1, 7.1, 8.2 History and Social Science: VUS.8, WHII.8
Demonstrate hand hygiene techniques.	English: 6.1, 6.6, 7.1, 7.6, 8.2, 8.6 History and Social Science: VUS.8, WHII.8
Explore body mechanics in lifting, pulling, and pushing.	English: 6.9, 7.9, 8.9 History and Social Science: VUS.8, WHII.8
Demonstrate body mechanics as it relates to the musculoskeletal system.	English: 6.1, 7.1, 8.2 History and Social Science: VUS.8, WHII.8
Explain fire safety procedures.	English: 6.6, 7.6, 8.6 History and Social Science: VUS.8, WHII.8
Describe the purposes and methods of medical asepsis.	English: 6.6, 7.6, 8.6
Explain appropriate first aid.	English: 6.6, 7.6, 8.6 History and Social Science: VUS.8, WHII.8

Explain one-rescuer cardiopulmonary resuscitation (CPR) on an adult or child.	English: 6.6, 6.9, 7.6, 7.9, 8.6, 8.9
Demonstrate one-rescuer cardiopulmonary resuscitation (CPR) on an adult or child.	English: 6.6, 6.9, 7.6, 7.9, 8.6, 8.9
Explain foreign body airway obstruction (FBAO) procedures for a conscious and unconscious adult and child.	English: 6.6, 6.9, 7.6, 7.9, 8.6, 8.9
Demonstrate foreign body airway obstruction (FBAO) procedures for a conscious and unconscious adult and child.	English: 6.9, 7.9, 8.9
Explain infant resuscitation.	English: 6.6, 6.9, 7.6, 7.9, 8.6, 8.9
Demonstrate infant resuscitation.	
Explain foreign body airway obstruction (FBAO) procedures for a choking conscious and unconscious infant.	English: 6.6, 6.9, 7.6, 7.9, 8.6, 8.9
Demonstrate foreign body airway obstruction (FBAO) procedures for a choking conscious and unconscious infant.	English: 6.9, 7.9, 8.9

## Teaching Resources

### Gaining an Overview of the Healthcare Industry

- "Deaths—Leading Causes." Centers for Disease Control and Prevention. <http://www.cdc.gov>.
- "History of Medicine (Interactive Timeline)." <http://www.abpschools.org.uk/res/coResourceImport/resources04/history/timeline.cfm>.
- "Medical Advances Timeline." Information Please. <http://www.infoplease.com/ipa/A0932661.html>.
- "Medical Timeline: 1840s to 1990s." Duke University. <http://library.duke.edu/digitalcollections/>.
- "What is COPD?" National Health, Lung, and Blood Institute. [http://www.nhlbi.nih.gov/health/dci/Diseases/Copd/Copd\\_WhatIs.html](http://www.nhlbi.nih.gov/health/dci/Diseases/Copd/Copd_WhatIs.html).
- "[BOD1E5](#): The human body explored with numbers." Science Museum of Virginia.

### Understanding Health Care Regulations

- Nurse License Compact. <https://www.ncsbn.org>.
- Virginia Board of Nursing. <https://www.dhp.virginia.gov/Boards/Nursing/>.

- Virginia Department of Health. <https://www.vdh.virginia.gov/>.
- Virginia Department of Health Professions. <http://www.dhp.virginia.gov>.

### Factors Affecting Health Care Consumers

- "Cut the Fat." American Heart Association. <http://www.americanheart.org/presenter.jhtml?identifier=3003242>.
- "How Fit Am I?" American Heart Association. <http://www.americanheart.org/presenter.jhtml?identifier=3003239>.
- "MyPyramid." U.S. Department of Agriculture. <https://www.fns.usda.gov/mypyramid>.
- "Questions and Answers about Health Insurance." U.S. Agency for Health Care Research and Quality. <http://www.ahrq.gov/consumer/insuranceqa/insuranceqa.pdf>.
- "Rate That Snack." American Heart Association. <https://www.heart.org/>
- "Take Charge of Your Health." National Institutes of Health. [http://win.niddk.nih.gov/publications/take\\_charge.htm](http://win.niddk.nih.gov/publications/take_charge.htm).
- Teen's Health Center. Mayo Clinic. <http://www.mayoclinic.com/health/teens-health/TN99999>.
- "Today's Specials." American Heart Association. <https://www.heart.org/>.
- Cultural Competence, U.S. Department of Health and Human Services. <https://www.hhs.gov/ash/oah/resources-and-training/tpp-and-paf-resources/cultural-competence/index.html>.

### Examining the Importance of Safety and Asepsis in the Health Care Industry

- Fire Extinguisher Use. Occupational Safety and Health Administration. [http://www.osha.gov/SLTC/etools/evacuation/portable\\_use.html](http://www.osha.gov/SLTC/etools/evacuation/portable_use.html).
- Health Care Facilities. Occupational Safety and Health Administration. <https://www.osha.gov/SLTC/healthcarefacilities/>.

### Exploring Health Care as a Career

- *American Careers: Health Careers Planner*. Overland Park, KS: Career Communications, Inc., 2004. <http://www.carc.com>.
- *Health Science Career Exploration*. Louise Simmers. Clifton Parks, NY: Thomson Delmar Learning Cengage, 2004.
- Medical Mysteries on the Web (Web game). <http://medmyst.rice.edu>.
- National Institutes of Health. <http://www.nih.gov>.
- Virginia Career VIEW. Virginia Department of Education. Source for career and education information within the state of Virginia. <http://www.vacareerview.org>.

### Practicing First Aid Techniques

- "Anatomy of a First Aid Kit." American Red Cross. <http://www.redcross.org/services/hss/lifeline/fakit.html>.

# Appendix: Career Cluster Information

<b>Career Cluster: Health Science</b>	
<b>Pathway</b>	<b>Occupations</b>
<b>Diagnostics Services</b>	<b>Cardiovascular Technologist</b> <b>Computer Tomography (CT) Technologist</b> <b>Medical, Clinical Laboratory Technician</b> <b>Phlebotomist</b> <b>Radiologic Technologist, Radiographer</b>
<b>Support Services</b>	<b>Environmental Sampling and Analysis Technician</b> <b>Food Service Worker</b> <b>Front Office Assistant</b> <b>Materials Manager</b> <b>Medical, Clinical Laboratory Technologist</b>
<b>Therapeutic Services</b>	<b>Emergency Medical Technician, Paramedic</b> <b>Licensed Practical Nurse</b> <b>Medical Assistant</b> <b>Physical Therapist</b> <b>Physical Therapist Assistant</b>