

CTE CONTENT AREA: Health Sciences

CONTENT MODULE TITLE: Safety in Health Science Careers

MODULE DESCRIPTION

This module introduces students to the importance of safety in health science careers. Students will examine the safety risks and potential hazards in health science environments and identify health and safety practices that will prevent injury and illness. Current issues related to personal safety, client safety, and facilities safety will be explored. Students will become familiar with best practices related to prevention, preparedness, and response in the context of injury and illness in health science fields. Students will identify the knowledge, skills, education, and training necessary for working safely in the health science fields.

ESSENTIAL QUESTION

What knowledge and skills are required to prevent, prepare for, and respond to injuries and illnesses in the health science field?

MODULE CONTENT

Safety in Health Science Careers

1. Safety in Health Science Workplaces

Students will

- a) Tell how safety procedures protect health science professionals and their clients
- b) Identify safety hazards for each health science career pathway (i.e., diagnostic services, health informatics, support services, therapeutic services, and biotechnology research and development)
- c) Understand and utilize health science safety vocabulary
- d) Investigate school, community, state and federal guidelines for safety in health science settings
- e) Communicate safety concerns to appropriate leaders in classroom and workplace situations

2. Client Safety

Students will

- a) Recognize potential health and safety hazards in health care environments
- b) List safety practices employed by health science professionals and tell how they protect clients from injury and illness
- c) Describe the "chain of infection" and the standard precautions used to prevent disease in health care settings
- d) Practice procedures for cleansing hands, instruments, and equipment to reduce or eliminate pathogens
- e) Practice procedures for safely transferring linens, garments, and trash from clients' environments

3. Employee Safety

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Students will

- a) Identify common lifting safety and fall hazards in health science careers
- b) Define "ergonomics" and practice principles of body mechanics and ergonomics
- c) Choose the appropriate equipment for the assigned task
- d) Use equipment and instruments according to the manufacturer's guidelines and accepted safety practices
- e) Know the types of Personal Protective Equipment(PPE) required for specific health science careers as protection from exposure to microbiological hazards
- f) Demonstrate the appropriate use, care, and disposal of PPE
- g) Apply Universal Precautions for every exposure incident

4. Safe Facilities

Students will

- a) Describe sanitation and waste disposal practices that foster clean and healthy facilities
- b) Tell how food, fire, and chemical safety procedures contribute to safe environments for health science professionals and clients
- c) Identify components of emergency, disaster, and evacuation plans
- d) Explain the importance of coordinating emergency, disaster, and evacuation plans with outside agencies
- e) Participate in an incident drill
- f) Describe ways health science professionals respond to workplace emergencies based on their specific roles and responsibilities as members of a health care team

5. Safety Issues in Health Science Career Pathways

Students will

- a) Understand typical safety issues found in specific health science career areas
- b) Assess personal comfort in facing safety risks inherent in specific health science career areas
- c) Evaluate personal suitability for work in specific health science careers

ACTIVITIES

Career and Community Connections

First Aid, AED, and CPR

Students research the availability of First Aid, AED, and CPR training for members of the community, such as through the American Red Cross. Students use their research to prepare electronic and hardcopy brochures encouraging school and community members to complete trainings. Students will post brochures on the school website, leave copies in the school health office, and deliver copies to community health service providers.

Communication and Interpersonal Relationships

Chain of Infection

As a class, complete a close reading of an infectious disease fact sheet. Review the concept of "chain of infection" and the links in the chain (i.e., reservoirs/hosts, portals of exit, modes of transmission, portals of entry, host susceptibility). Students work in small groups to develop a

visual showing the chain of infection for the infectious disease and groups share their visuals. Discuss possible strategies for breaking the chain of infection at each link.

Financial and Consumer Literacy

Costs for PPE

Provide students with a picture of a health science professional wearing PPE for infection control: disposable gown, mask, eyewear, and gloves. Research the price for each item and calculate the total expense. Review the OSHA requirement that employers must provide PPE and lead a discussion on ways health care organizations budget funds for PPE.

Health, Safety, and Wellness

Hand Washing

Students watch a video presentation and a teacher demonstration on the proper hand washing protocol for health science professionals, taking notes on each step. Students work in pairs to practice the protocol: one student practices while the other observes and provides feedback; students exchange roles. Each student demonstrates for the teacher. Students write "exit tickets" summarizing how to properly wash hands to eliminate microorganisms.

Problem Solving and Innovation

Maintenance Cart

Students brainstorm a list of equipment, tools, and supplies that support services health science professionals must bring to a client room to clean, sanitize, and disinfect. Provide students with a floorplan of a typical client room including furniture placement. Students work in small groups to design an ergonomic maintenance cart that will assist support services professionals in transporting and efficiently using the equipment, tools, and supplies in the client room. Groups present their cart plans to the class for comment and revise their designs based on feedback.

Sustainability

Lifting Safety

Invite a physical therapist to class. Ask the therapist to discuss common injuries to health science professionals that result from improper lifting. Ask the guest to explain the role of physical therapy in helping people recover and gain strength following lifting injuries. Following the presentation, students write a reflection describing how safe lifting techniques help to sustain the health sciences workforce.

STANDARDS ADDRESSED

New York State Career Development and Occupational Studies (CDOS) Standards

Intermediate Level

<http://www.p12.nysed.gov/cte/>

Standard 1: Career Development

Students will be knowledgeable about the world of work, explore career options, and relate personal skills, aptitudes, and abilities to future career decisions.

Standard 2: Integrated Learning

Students will demonstrate how academic knowledge and skills are applied in the

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workplace and other settings.

Standard 3a: Universal Foundation Skills

Students will demonstrate mastery of the foundation skills and competencies essential for success in the workplace.

Common Career Technical Core Standards

<https://www.careertech.org/career-ready-practices>

Career Ready Practices

1. Act as a responsible and contributing citizen and employee
2. Apply appropriate and academic and technical skills
3. Attend to personal health and financial well-being
4. Communicate clearly and effectively and with reason
5. Consider environmental, social, and economic impacts of decisions
8. Utilize critical thinking to make sense of problems and persevere in solving them
10. Plan education and career paths aligned to personal goals
11. Use technology to enhance productivity

National Consortium for Health Science Education

<https://www.healthscienceconsortium.org/national-health-science-standards/>

Foundation Standard 2: Communications

Demonstrate methods of delivering and obtaining information, while communicating effectively

Foundation Standard 4 Employability Skills

Utilize employability skills to enhance employment opportunities and job satisfaction

Foundation Standard 5: Legal Responsibilities

Describe legal responsibilities, limitations, and implications on healthcare worker actions

Foundation Standard 6: Ethics

Understand accepted ethical practices with respect to cultural, social, and ethnic differences within the healthcare environment

Foundation Standard 7: Safety Practices

Identify existing and potential hazards to clients, co-workers, and self. Employ safe work practices and follow health and safety policies and procedures to prevent injury and illness

Foundation Standard 8: Teamwork

Identify roles and responsibilities of individual members as part of the healthcare team

RESOURCES

HOSA: Future Health Professionals

HOSA in the Classroom

<http://www.hosa.org/>

HOSA in the classroom provides instructional tools for health science teachers. This section of HOSA website provides an opportunity for HOSA advisors to share exciting and valuable lesson plans with teachers from across the United States.

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Centers for Disease Control (CDC)

<https://www.cdc.gov/careerpaths/>

CDC's Career Paths to Public Health (CPP) website is a roadmap for students and teachers interested in learning and teaching about epidemiology and public health sciences (EPHS). It provides information on CDC workshops, activities, and lesson plans as well as other resources. These materials are designed to introduce the future public health workforce to EPHS, to promote health literacy and to provide examples of how math and science are used every day to solve public health problems.

New York State Department of Labor

New York State Career Zone

<https://www.careerzone.ny.gov>

Career Zone is a no-cost online career exploration and planning tool developed by the New York State Department of Labor. It offers career and education information on thousands of careers, as well as, self-assessment and career planning tools. Career Zone is appropriate for users from middle school through adult.

United States Department of Labor

CareerOneStop

<https://www.careeronestop.org>

CareerOneStop is the career, training, and job search website for the U.S. Department of Labor. The website serves job seekers, businesses, students, and career advisors with a variety of free online tools, information and resources.

Association of Career and Technical Education

Career Planning Guide

https://www.acteonline.org/wp-content/uploads/2018/02/ACTE_CC_Paper_FINAL.pdf

Research has identified middle school as a time when students can benefit the most from career exploration, a process of building self-awareness, learning about potential careers, and developing a plan for reaching future goals.

AdvanceCTE

Middle Level Career Interest Inventory

<https://cte.careertech.org/sites/default/files/StudentInterestSurvey-English.pdf>

AdvanceCTE provides a Career Interest Inventory worksheet to use with students in helping them identify the potential matches to the sixteen career clusters available to them.

Association of CTE Administrators (ACTEA)

CTE Strong Videos

<http://www.ctestrong.com>

Edge Factor has created a series of inspirational videos related to career and education that provide students with a very contemporary perspective on CTE options. Career Cluster videos provide a new look at the many career options that students have in high school and beyond.

New York State Health Sciences Educators Association (NYSHSEA)

<http://www.nyshsea.org/home.html>

NYSHSEA serves as a resource group for educators seeking consultation concerning

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Health Science education and promotes communication among NYSHSEA members. NYSHSEA collaborates with other groups and individuals on matters affecting Health Science Education and supports NYSED activities.

Career and Technical Education Technical Assistance Center of New York (CTE TAC)

<http://nyctecenter.org/>

The Career and Technical Education Technical Assistance Center (CTE TAC) operates under a state contract to assist the New York State Education Department (NYSED) in carrying out its mission of improving the quality, access, and delivery of career and technical education through research-based methods and strategies resulting in broader CTE opportunities for all students.