

**NEW YORK STATE EDUCATION DEPARTMENT
MIDDLE LEVEL CAREER AND TECHNICAL EDUCATION
HEALTH SCIENCES
HEALTH SCIENCE CAREER PATHWAYS
REFORMATTED MAY 2023**



MODULE DESCRIPTION

This module provides students with opportunities to examine five health science career pathways: diagnostic services, health informatics, support services, therapeutic services, and biotechnology research and development. Students will investigate job tasks and requirements for positions in each pathway to understand the responsibilities of professionals in health science careers. Students will explore future career possibilities by identifying the knowledge, skills, education, and training necessary for success within the health science pathways.

GUIDING QUESTION

What personal skills, abilities, and aptitudes are needed for success in health science careers?

MODULE CONTENT

1. HEALTH SCIENCE PATHWAYS

STUDENTS WILL:

- a) Define the term “career cluster” and explain the career cluster system
- b) Explain how the health science career cluster is organized into five pathways: diagnostic services, health informatics, support services, therapeutic services, and biotechnology research and development
- c) Explain ways health and wellness are promoted by health science workers across the pathways
- d) Explore the health care settings for health career pathways, such as hospitals, ambulatory, long-term care, home health care, medical, dental, mental health, pharmacy, office, and clinic by either virtual or by immersive exploratory opportunities
- e) Participate in classroom activities to identify personal interest, aptitude, and ability for skills required in health science career pathways

2. HEALTH SCIENCE WORKPLACE EXPECTATIONS

STUDENTS WILL:

- a) Identify the appropriate health science career for an identified need or task (e.g. medical technician for labeling client samples)
- b) Compare and contrast the opportunities for the individual initiative, teamwork, collaboration, and leadership in health science careers
- c) Describe strategies for assessing and adjusting personal behaviors to meet workplace expectations in health science careers

- d) Explain how the primary activities, client contact, and work environment for a specific health science career could be either a benefit or a challenge for an individual
- e) Explain the purpose and importance of ongoing education and training for health science professionals
- f) Understand the requirements for accurate and appropriate communication of health/medical information
- g) Explain how health science careers are interdependent (i.e. relate to one another)

3. DIAGNOSTIC SERVICES PATHWAY

STUDENTS WILL:

- a) Distinguish the diagnostic services pathway as related careers which use tests and evaluations that aid in the detection, diagnosis and treatment of diseases, injuries, or other physical conditions
- b) Examine the professional standards that apply to diagnostic services professionals
- c) Identify the education and preparation required for levels of credentials and accreditation in diagnostic services careers
- d) List and describe the health care settings and roles within those settings for diagnostic services professionals
- e) Assess personal interest and aptitude for skills needed by diagnostic services professionals through practice of these skills in a variety of classroom simulations

4. HEALTH INFORMATICS PATHWAY

STUDENTS WILL:

- a) Distinguish the health informatics pathway as all aspects such as; administrators who manage healthcare agencies, individuals responsible for managing patient data and information, financial information, and computer applications related to health processes and procedures
- b) Examine the professional standards that apply to health informatics professionals
- c) Identify the education and preparation required for levels of credentials and accreditation in health informatics careers
- d) List and describe the health care settings, and roles within those settings, for health informatics professionals
- e) Assess personal interest and aptitude for skills needed by health informatics professionals through practice of these skills in a variety of classroom situation

5. SUPPORT SERVICES PATHWAY

STUDENTS WILL:

- a) Distinguish the support services pathway as careers that provide a therapeutic environment for healthcare delivery; offering a full range of opportunities from entry level to management, including technical and professional careers
- b) Examine the professional standards that apply to support services professionals
- c) Identify the education and preparation required for levels of credentials and accreditation in support services careers
- d) List and describe the health care settings and roles within those settings for support services professionals
- e) Assess personal interest and aptitude for skills needed by support services professionals through practice of these skills in a variety of classroom simulations

6. THERAPUTIC SERVICES PATHWAY

STUDENTS WILL:

- a) Distinguish the therapeutic services pathway as occupations focused on changing the health status of a patient over time through working directly with the patients; providing care, treatment, counseling, and health education information
- b) Examine the professional standards that apply to therapeutic services professionals
- c) Identify the education and preparation required for levels of credentials and accreditation in therapeutic services careers
- d) List and describe the health care settings and roles within those settings for therapeutic services professionals
- e) Assess personal interest and aptitude for skills needed by therapeutic services professionals through practice of these skills in a variety of classroom simulations

7. BIOTECHNOLOGY RESEARCH AND DEVELOPMENT PATHWAY

STUDENTS WILL:

- a) Distinguish the biotechnology research and development pathway as careers involved in bioscience research and development as it applies to human health; the study of diseases and disorders to discover new treatments or invent medical devices used to directly assist patients or to improve the accuracy of diagnostic tests
- b) Examine the professional standards that apply to biotechnology research and development professionals
- c) Identify the education and preparation required for levels of credentials and accreditation in biotechnology research and development careers
- d) List and describe the health care settings, and roles within those settings, for biotechnology research and development professionals

8. CAREERS IN HEALTH SCIENCE PATHWAYS

STUDENTS WILL:

- a) Investigate a specific career in health science and identify the education and training pathways used to reach that career
- b) Explore local, regional, state, and national employment outlooks for health science career pathways

ILLUSTRATIVE ACTIVITIES BY THEME MODULE

These activities are intended to serve as examples of how the content in this module could be tied to each of the six middle level themes.

CAREER AND COMMUNITY OPPORTUNITIES

CAREER PATH VISUALS

Students research careers in public health and community nutrition to learn about nutrition programs designed to improve the health and wellness of people in various stages of the lifecycle. Students develop short food and nutrition learning activities to teach to preschool or elementary school students in the community to simulate work in a public health career.

COMMUNICATION AND INTERPERSONAL RELATIONSHIPS

COMMUNITY HEALTH

Students work in pairs to find definitions of the terms "community" and "health" and to devise a definition of "community health." Pairs share their findings with the entire class. As a group, the class develops a working definition with the instructor serving as a facilitator. Students investigate ways health science professionals in their school and community promote health practices that are in line with their definition. As a class, choose a community health practice that could be advertised through the school's social media to minimize illness and promote a healthy environment.

FINANCIAL AND CONSUMER LITERACY

TRAINING COSTS

Invite a panel of representatives from agencies that offer credential programs for health science careers, such as comprehensive high schools or BOCES, community and four-year

colleges, proprietary schools, and health care facilities. Panelists present the programs available, costs for training, and financial assistance available. Students record information in chart form and use their charts to compare and contrast health science career training opportunities and costs.

HEALTH, SAFETY, AND WELLNESS

HEALTH SCIENCES SETTINGS

Students work in teams to develop lists of "unusual" workplaces for health sciences professionals, such as cruise ships, sports arenas, correctional facilities, schools and colleges, mobile vehicles, and law and insurance offices. Create a class master list. Teams select from the class list and produce a 2-3-minute video presentation describing the job tasks, benefits, and challenges of providing health care in that setting. Conduct a closing class discussion focusing on ways health and wellness are promoted by health science workers across all settings.

PROBLEM SOLVING AND INNOVATION

PARALYMPIC ATHLETES

Students read a scholarly article or view a video showing Paralympic athletes. Students research the development of a prosthetic limb for an athlete. Students take note of all the health science professions that are integral to the development of the prosthetic the athlete will use.

SUSTAINABILITY

EMPLOYMENT PROJECTIONS

Provide students with data showing employment projections for health science careers over the next ten years. Students analyze the data and develop a list of the ten careers that will have the greatest shortages. Students research the characteristics of those careers to determine possible reasons for the shortages. Students develop a marketing plan to promote the career and build a new cadre of workers. Post the plan on the class website.

STANDARDS ADDRESSED

NEW YORK STATE CAREER DEVELOPMENT AND OCCUPATIONAL STUDIES (CDOS) STANDARDS

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 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

NEW YORK STATE STANDARDS FOR FAMILY AND CONSUMER SCIENCES

Intermediate Level

Standard 1: Personal Health and Fitness

Students will have the necessary knowledge and skills to establish and maintain physical fitness, participate in physical activity, and maintain personal health

Standard 2: Safe and Healthy Environment

Students will acquire the knowledge and ability necessary to create and maintain a safe and healthy environment

Standard 3: Resource Management

Students will understand and be able to manage their personal and community resources

COMMON CAREER TECHNICAL CORE STANDARDS

CAREER READY PRACTICES

1. Act as a responsible and contributing citizen and employee
4. Communicate clearly and effectively and with reason
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
12. Work productively in teams while using cultural global competence

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 8: Teamwork

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

Foundation Standard 9: Health Maintenance Practices

Differentiate between wellness and disease. Promote disease prevention and model healthy behaviors.

Foundation Standard 10: Technical Skills

Apply technical skills required for all career specialties and demonstrate skills and knowledge as appropriate

Foundation Standard 11: Information Technology in Healthcare

Apply information technology practices common across health professions.

RESOURCES

Disclaimer: Posting of resources on this form does not constitute an endorsement from the New York State Education Department nor does it imply that the following resources are mandatory or the only ones that can be used. Teachers and administrators ensure that resources align with local policies and are responsible for choosing the resources have the final authority, in alignment with local policies, to choose and utilize the resources that best meet the needs of their students. Questions regarding compliance with [Education Law 2D](#) should be directed to your administrator and/or chief information officer.

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.

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>

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.

ADVANCE CTE: 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.

NEW YORK STATE HEALTH SCIENCE EDUCATORS ASSOCIATION (NYSHSEA)

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

NYSHSEA serves as a resource group for educators seeking consultation concerning 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

<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.