

Building a Health Science Program

Denise DuBois, Realityworks



NCHSE

National Consortium for
Health Science Education

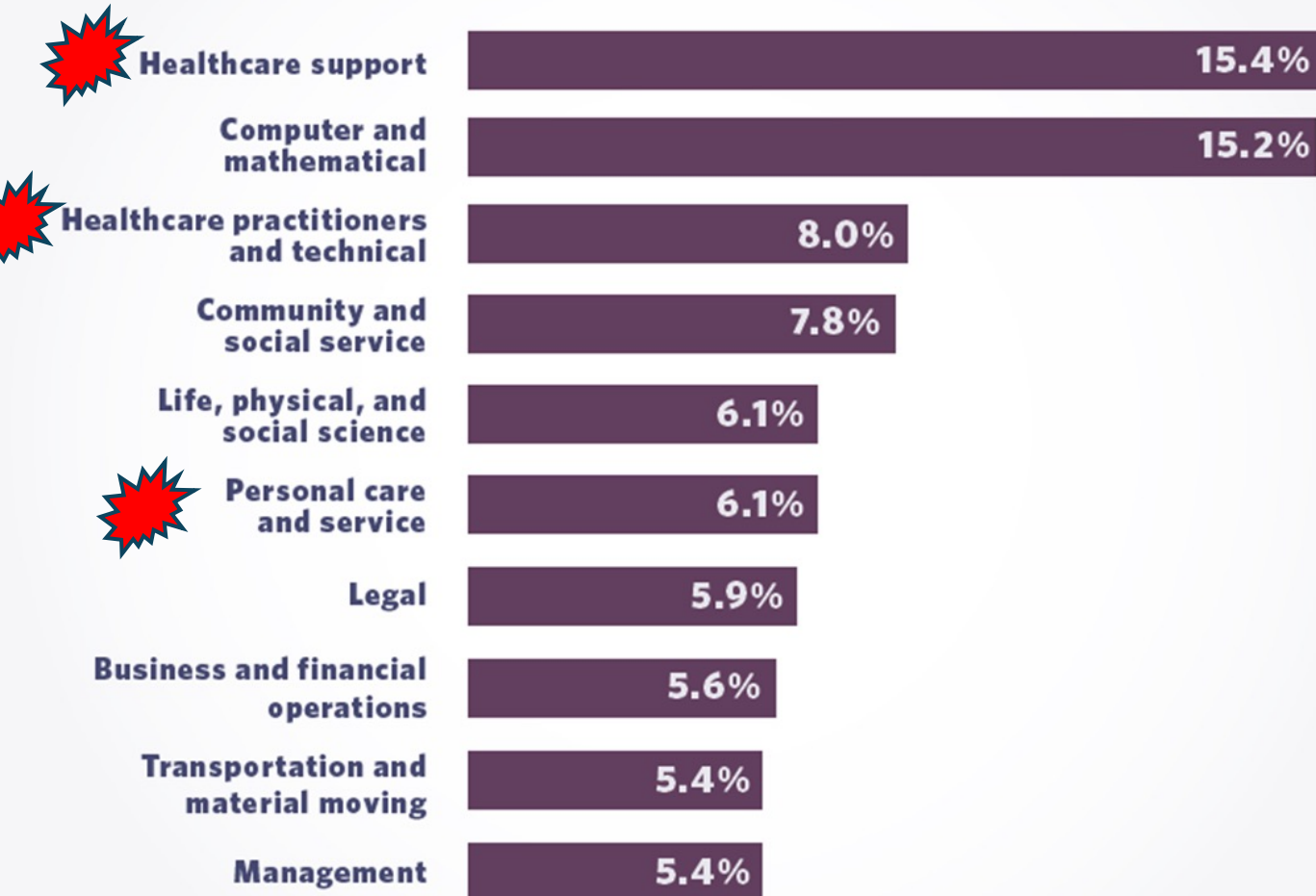
- Identify resources for building general pathways
- Identify resources specific to health science pathways
- The importance of industry-recognized credentials
- How NCHSE can help
- Q&A

Agenda



Top 10 Occupational Groups Projected to Grow the Fastest

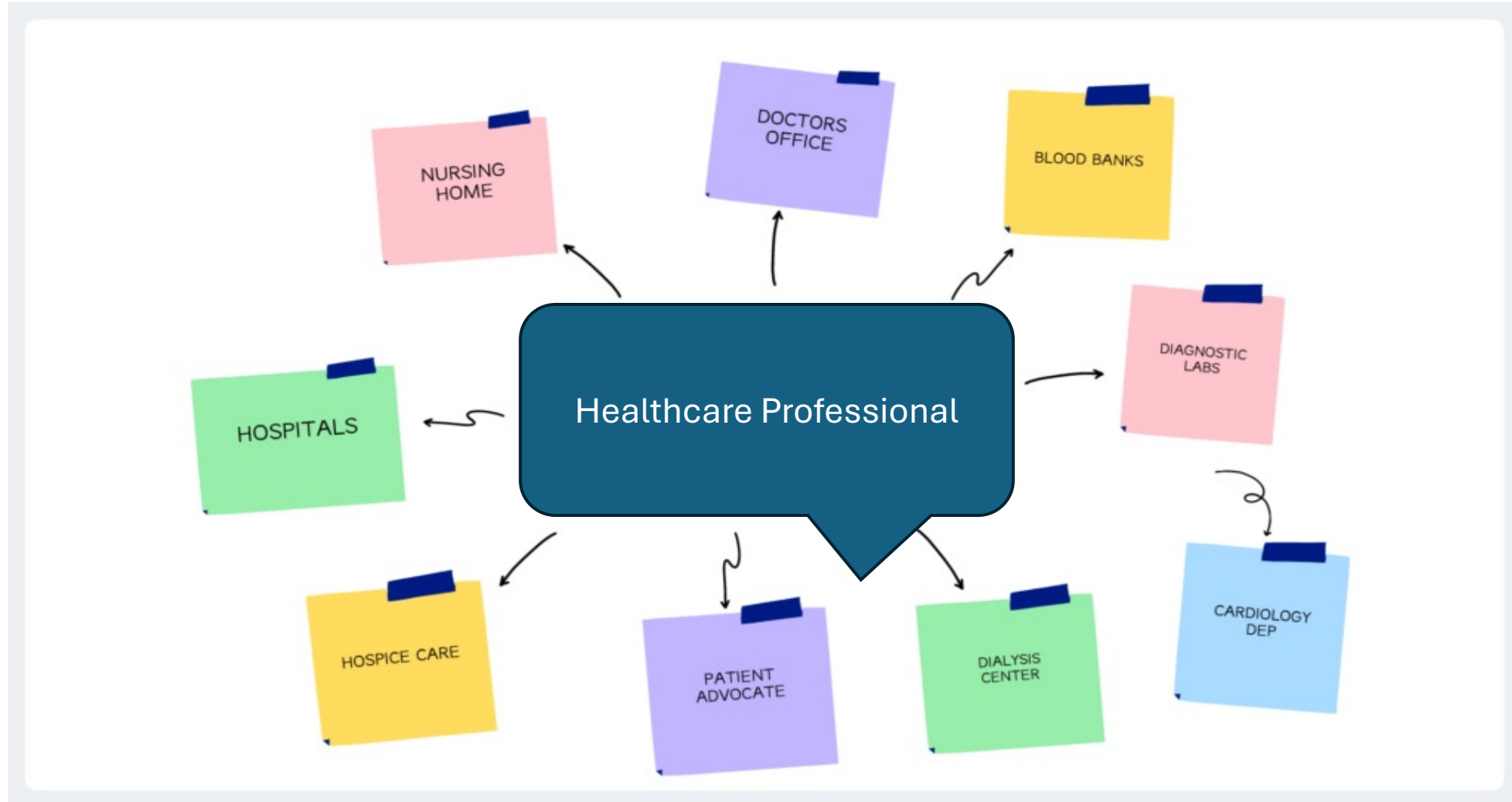
PERCENT EMPLOYMENT CHANGE, PROJECTED 2022-32



The Need for Healthcare Workers



Where Do Healthcare Professionals Work?



BLS Information Available - Example

	Nursing Assistant	PATIENT CARE TECHNICIAN/ASSISTANT	Medical Assistant
Certification	State	National	National
Main Responsibilities	Patient Care	Patient Care+++	Patient Care+++ and/or Administrative
Job Prospects	11%	?	29%
Salary	\$13.23	\$15.00	\$15.61
Education	4-12 weeks	2-7 months	1-2 years



Bureau of Labor Statistics cont...

Healthcare Occupations








Workers in these occupations help clients maintain and improve wellbeing.

Overall employment in healthcare occupations is projected to grow much faster than the average for all occupations from 2022 to 2032. About 1.8 million openings are projected each year, on average, in these occupations due to employment growth and the need to replace workers who leave the occupations permanently.

The median annual wage for healthcare practitioners and technical occupations (such as dental hygienists, physicians and surgeons, and registered nurses) was \$80,820 in May 2023, which was higher than the median annual wage for all occupations of \$48,060. Healthcare support occupations (such as home health and personal care aides, medical transcriptionists, and occupational therapy assistants) had a median annual wage of \$36,140 in May 2023, which was lower than the median annual wage for all occupations.

BLS employment projections, wage, and other data for related occupations not shown in the following table are available on the [Data for Occupations Not Covered in Detail](#) page. Information highlighting physical demands, cognitive and mental requirements, and other qualifications for workers in the [healthcare practitioners and technical](#) and [healthcare support](#) groups are available in BLS Occupational Requirements Survey (ORS) profiles.

[Healthcare Occupations : Occupational Outlook Handbook: : U.S. Bureau of Labor Statistics \(bls.gov\)](#)

	OCCUPATION	JOB SUMMARY	ENTRY-LEVEL EDUCATION	2023 MEDIAN PAY
	Athletic Trainers	Athletic trainers specialize in preventing, diagnosing, and treating muscle and bone injuries and illnesses.	Master's degree	\$57,930
	Audiologists	Audiologists diagnose, manage, and treat patients who have hearing, balance, or related problems.	Doctoral or professional degree	\$87,740
	Chiropractors	Chiropractors evaluate and treat patients' neuromusculoskeletal system, which includes nerves, bones, muscles, ligaments, and tendons.	Doctoral or professional degree	\$76,530
	Clinical Laboratory Technologists and Technicians	Clinical laboratory technologists and technicians perform medical laboratory tests for the diagnosis, treatment, and prevention of disease.	Bachelor's degree	\$60,780
	Dental Assistants	Dental assistants provide patient care, take x rays, keep records, and schedule appointments.	Postsecondary nondegree award	\$46,540
	Dental Hygienists	Dental hygienists examine patients for signs of oral diseases, such as gingivitis, and provide preventive care, including oral hygiene.	Associate's degree	\$87,530
		Dentists diagnose and treat problems with		

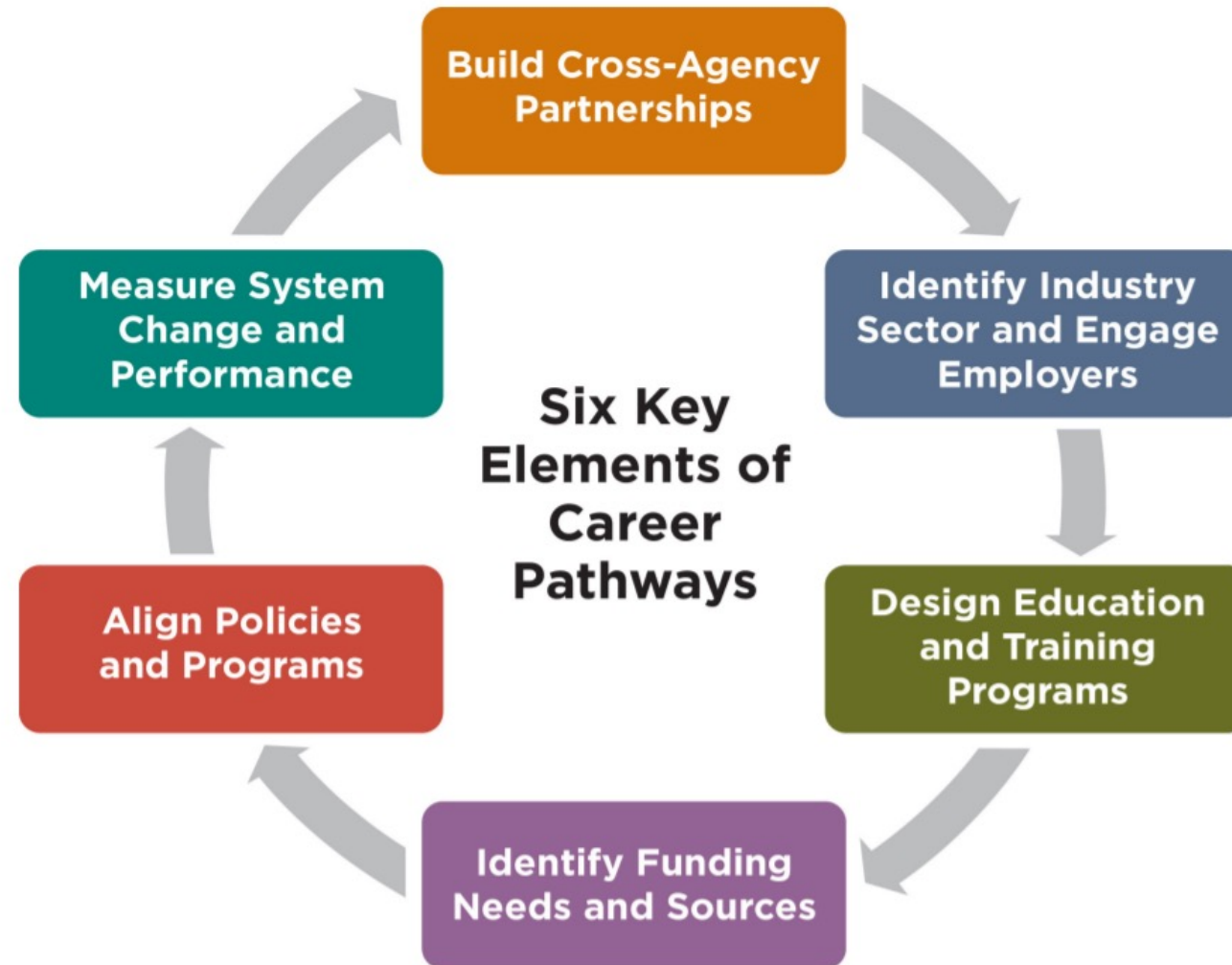
Building a Career Pathway



NCHSE

National Consortium for
Health Science Education

Six Key Elements for Developing Career Pathways



Build an Advisory Council

Invite 5-10 industry professionals to participate in a health science advisory council

Meet several times per year

Focus on outcomes – what are employers looking for

Are you teaching the right things?

Form partnerships for field experience, job shadowing, guest speaker opportunities



Seek Industry-Recognized Certifications



Does your state dep. recommend a specific certification or testing agency?

Are your instructors licensed to teach PCT courses?

What are local employers looking for?

Is employment transferable?

What is the cost of certification or a specific credential?



Building a Health Science Pathway



NCHSE

National Consortium for
Health Science Education

Careertech.org

Health Science

This Career Cluster® is focused on planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.

Changing
are coming
Fall 2024!!

This Career Cluster® is focused on planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.



Career Cluster Resources

- The Common Career Technical Core with performance elements ([PDF](#))
- Knowledge & Skills Statements ([PDF](#), [Excel](#))
- Plan of Study ([PDF](#), [Excel](#))
- Career Cluster Frame ([PDF](#)), which provides a broad overview for each Career Cluster, including Essential Knowledge and Skills, the types of educational topics studied within a particular Career Pathway, and a listing of sample Career Specialties or occupations.

Pathways

Therapeutic Services Pathway

- Knowledge & Skills Statements ([PDF](#), [Excel](#))
- Plan of Study ([PDF](#), [Excel](#))

Diagnostic Services Pathway

- Knowledge & Skills Statements ([PDF](#), [Excel](#))
- Plan of Study ([PDF](#), [Excel](#))

Health Informatics Pathway

- Knowledge & Skills Statements ([PDF](#), [Excel](#))
- Plan of Study ([PDF](#), [Excel](#))

Support Services Pathway

- Knowledge & Skills Statements ([PDF](#), [Excel](#))
- Plan of Study ([PDF](#), [Excel](#))

Biotechnology Research & Development Pathway

- Knowledge & Skills Statements ([PDF](#), [Excel](#))
- Plan of Study ([PDF](#), [Excel](#))

[Health Science - Advance CTE \(careertech.org\)](https://careertech.org)

National Health Science Standards

- Academic foundations
- Communications
- Systems
- Employability skills
- Legal responsibilities
- Ethics
- Safety practices
- Teamwork
- Health maintenance practices
- Technical skills
- Information technology in healthcare



Building a Specific Health Science Pathway



NCHSE

National Consortium for
Health Science Education

Organizations with Certifications

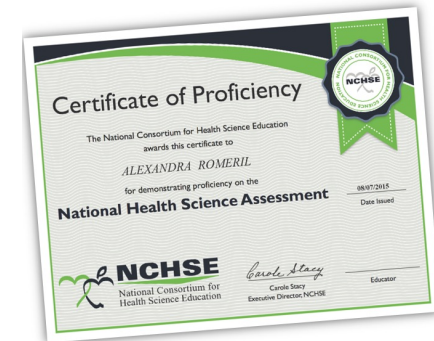
- [American Allied Health \(AAH\)](#)
- [American Medical Technologists \(AMT\)](#)
- American Society of Clinical Pathologists (ASCP) [Board of Certification \(BOC\)](#)
- [Biotility](#)
- [Dental Assisting National Board \(DANB\)](#)
- [National Academy of Sports Medicine \(NASM\)](#)
- [National Center for Competency Testing \(NCCT\)](#)
- [National Healthcareer Association \(NHA\)](#)
- [Pharmacy Technician Certification Board \(PTCB\)](#)
- [YouScience](#)

[2023-2024-NCHSE-PARTNERS-08-30-2023.pdf \(healthscienceconsortium.org\)](#)

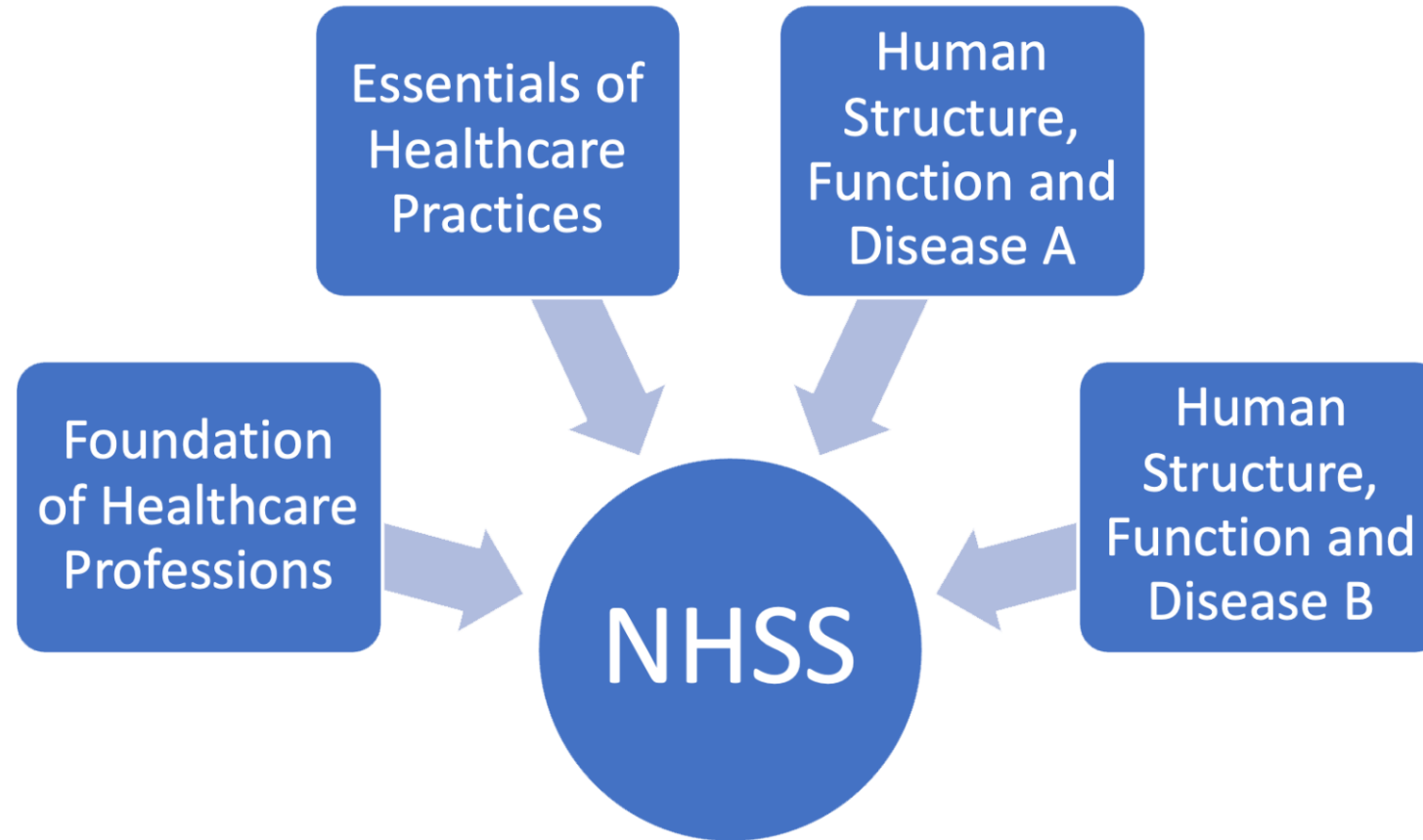


More Organizations with Assessments or Competitions

- National Consortium for Health Science Education (NCHSE)
 - National Health Science Assessment
- HOSA – Future Health Professionals
 - Competitive Events



NCHSE Four Course Framework



NCHSE Crosswalk



National Health Science Standards Crosswalk

The crosswalk template is a working resource to document where the National Health Science Standards (NHSS) being met in their courses. This resource provides teachers a way to ensure all the NHSS have been taught in your health science courses throughout your program. The curriculum column can be used to include examples such as: what lesson is used to teach the standard, which chapter in a particular resource, an activity, project, or PPT, and educational resource used to support teaching of the standard.

Foundation Standard 1: Academic Foundation

Understand human anatomy, physiology, common diseases and disorders, and medical math principles.

1.1 Human A&P	Subcategories	Curriculum	Courses
1.1.1 Describe the organization of the human body and directional terms.			
<i>a. Identify levels of organization</i>	<ul style="list-style-type: none"> ● Cellular ● Chemical ● Organ ● Organism ● System ● Tissue 		
<i>b. Demonstrate anatomical position</i>			
<i>c. Identify body planes</i>	<ul style="list-style-type: none"> ● Coronal / Frontal ● Midsagittal ● Sagittal ● Transverse/Horizontal 		
<i>d. Use directional terms</i>	<ul style="list-style-type: none"> ● Anterior / Posterior ● Cephalic/Caudal ● Medial / Lateral ● Proximal / Distal ● Superficial / Deep ● Superior / Inferior ● Ventral/Dorsal 		



Health Science Pathways and Sample Career Specialties

Updated May 2024

Sample Career Specialties	<p>Acupuncturist Anesthesiologist Assistant Art/Music/Dance Therapist(s) Athletic Trainer Audiologist Certified Nursing Assistant Certified RN Anesthetist (CRNA) Chiropractor Dental Assistant Dental Hygienist Dental Lab Technician Dentist Dialysis Technician Dietitian/Nutritionist Dietetic Technician Dosimetrist Emergency Medical Technician Home Health Aide Kinesiotherapist/Kinesiologist Licensed Practical Nurse Massage Therapist Medical Assistant Mortician Nurse Practitioner Occupational Therapist Occupational Therapy Assistant Ophthalmic Technician Orientation & Mobility Specialist Orthotist/Prosthetist Paramedic Patient Care Technician (PCT) Pedorthist Personal Care Aide Pharmacist Pharmacy Technician Physical Therapist Physical Therapy Assistant Physician (MD/DO) Physician Assistant Podiatrist Psychologist Psychiatrist Radiation Therapist Recreational Therapist Registered Nurse Rehabilitation Counselor Respiratory Therapist Social Worker Speech Language Pathologist Surgeon Surgical Technologist Veterinarian Veterinarian Technician Wellness Coach</p>	<p>Advanced Cardiac Sonographer (ACS) Audiologist Blood Bank Technician Cardiovascular Technologist Certified Cardiogenic Technician (CCT) Certified Rhythm Analysis Technician (CRAT) Clinical Laboratory Technician Computer Tomography (CT) Technologist Cytogenetic Technologist Cytotechnologist Diagnostic Medical Sonographer Electrocardiographic (ECG or EKG) Technician Neurodiagnostic Technologist Exercise Physiologist Genetic Counselor Histotechnician Histotechnologist Magnetic Resonance (MR) Technologist Mammographer Medical Laboratory Scientist Medical Laboratory Technician Nuclear Medicine Technologist Nurse Practitioner Nutritionist/Dietitian Occupational Therapist Occupational Therapist Assistant Ophthalmic Technician/Technologist Ophthalmic Dispensing Optician Optometrist Phlebotomist Physical Therapist Physical Therapy Assistant Polysomnographic Technologist Positron Emission Tomography (PET) Technologist Radiologic Technician Registered Congenital Cardiac Sonographer (RCCS) Registered Cardiac Electrophysiology Specialist (RCES) Registered Cardiovascular Invasive Specialist (RCIS) Registered Cardiac Sonographer (RCS) Registered Phlebology Sonographer (RPhS) Registered Vascular Specialist (RVS) Respiratory Therapist</p>	<p>Admitting Clerk Applied Researcher Cancer Registrar Certified Compliance Technician Clinical Account Manager Clinical Account Technician Clinical Coder Clinical Data Miner Clinical Data Management Specialist Clinical Data Specialist Community Services Specialist Data Quality Manager Decision Support Analyst Epidemiologist Ethicist Health Educator Health Information Administrator Health Information Technician Health Information Services Healthcare Administrator Healthcare Finance Professional Information Privacy Officer Information Security Officer Managed Care Contract Analyst Medical Assistant Medical Illustrator Medical Information Technologist Medical Librarian Medical Records Technician Medical Transcriptionist Patient Account Manager Patient Account Technician Patient Advocate Patient Information Coordinator Project Manager Quality Management Specialist Quality Data Analyst Reimbursement Specialist Risk Manager Unit Coordinator Utilization Manager Utilization Review Manager</p>	<p>Behavioral Disorder Counselor Biomedical/Clinical Engineer Biomedical/Clinical Technician Clinical Simulator Technician Central Service Manager Central Service or Sterile Processing Technician Community Health Worker Dietary Manager Dietary Aide Environmental Services Facilities Manager Healthcare Administrator Healthcare Economist Maintenance Engineer Industrial Hygienist Interpreter Materials Manager Patient Navigator Telehealth Presenter Transport Technician Substance Abuse Counselor</p>	<p>Biochemist Bioinformatics Associate Bioinformatics Scientist Bioinformatics Specialist Biomedical Chemist Biomedical/Clinical Engineer Biomedical/Clinical Technician Biostatistician Biotechnician Assistant Cell Biologist Clinical Data Management Associate/Consultant Clinical Pharmacologist Clinical Trials Monitor Clinical Trials Research Associate Clinical Trials Research Coordinator Geneticist Laboratory Assistant-Genetics Laboratory Technician Medical Editor/Writer Microbiologist Molecular Biologist Pharmaceutical/Clinical Project Manager Pharmaceutical Sales Representative Pharmaceutical Scientist Pharmacologist Product Safety Associate/Scientist Process Development Associate/Scientist Processing Technician Quality Assurance Technician Quality Control Technician Regulatory Affairs Specialist Research Assistant Research Scientist Toxicologist</p>
	Pathways	Therapeutic Services	Diagnostic Services	Health Informatics	Support Services



Building Your Plan of Study

EDUCATION LEVELS	GRADE	English/ Language Arts	Math	Science	Social Studies/ Sciences	Other Required Courses Other Electives Recommended Electives Learner Activities	*Career and Technical Courses and/or Degree Major Courses for Therapeutic Services Pathway	SAMPLE Occupations Relating to This Pathway
<i>Interest Inventory Administered and Plan of Study Initiated for all Learners</i>								
SECONDARY	9	English/ Language Arts I	Algebra I	Biology	State History Civics	All plans of study should meet local and state high school graduation requirements and college entrance requirements. Certain local student organization activities are also important including public speaking, record keeping and work-based experiences. A foreign language is recommended.	<ul style="list-style-type: none"> • Health Science I: Introduction to Health Science • Information Technology Applications • Health Science II: Health, Safety and Ethics in the Health Environment • Health Science III: Employment in Health Occupations • Health Science IV: Introduction to Therapeutic Services 	Occupations Requiring Less than Baccalaureate Degree <ul style="list-style-type: none"> ▶ Anesthesiologist Assistant ▶ Certified Nursing Assistant ▶ Clinical Medical Assistant ▶ Data Entry Coordinator ▶ Dental Assistant/Hygienist ▶ Dental Lab Technician ▶ EMT/Paramedic ▶ Home Health Aide ▶ Licensed Practical Nurse ▶ Massage Therapist ▶ Orthotist/Prosthetist ▶ Pharmacist/Pharmacy Technician ▶ Physical Therapist/Assistant ▶ Radiologic Technician ▶ Registered Nurse ▶ Respiratory Therapist ▶ Surgical Technician
	10	English/ Language Arts II	Geometry	Chemistry	U.S. History			
	11	English/ Language Arts III	Algebra II	Physics or other science course	World History Sociology			
	College Placement Assessments-Academic/Career Advisement Provided							
	12	English/ Language Arts IV	Pre-Calculus or Calculus or Statistics	Anatomy and Physiology	Psychology Economics			
<i>Articulation/Dual Credit Transcribed-Postsecondary courses may be taken/moved to the secondary level for articulation/dual credit purposes.</i>								
POSTSECONDARY	Year 13	English Composition	Algebra	Chemistry Biological Science	American Government Psychology	All plans of study need to meet learners' career goals with regard to required degrees, licenses, certifications or journey worker status. Certain local student organization activities may also be important to include. Work-based learning is an integral part of this pathway.	<ul style="list-style-type: none"> • Health Science V: Therapeutic Services Preparation • Continue Courses in the Area of Specialization • Complete Therapeutic Services Major (4-Year Degree Program) 	Occupations Requiring Baccalaureate Degree <ul style="list-style-type: none"> ▶ Athletic Trainer ▶ Audiologist ▶ Chiropractor ▶ Dentist ▶ Dietician ▶ Exercise Physiologist ▶ Nurse Practitioner ▶ Occupational Therapist ▶ Optometrist ▶ Physician (MD/DO) ▶ Physician's Assistant ▶ Psychologist ▶ Recreation Therapist ▶ Social Worker ▶ Speech Language Pathologist ▶ Veterinarian
	Year 14	Speech/ Oral Communication Technical Writing	Statistics or Calculus	Microbiology	American History Sociology			
	Year 15	Continue courses in the area of specialization.						
	Year 16							

Secondary

Post-Secondary



SCAN ME!



Scan for access to free health science career exploration lessons.
Enter our drawing for nursing soft skill scenario cards!

NCHSE

National Consortium for
Health Science Education



Q&A

