

**Health Science Career Cluster  
Applications of Public Health  
Course Number: 25.45200**

**Course Description:**

The standards for the Public and Community Health pathway apply to occupations or functions involved primarily in environmental health, community health and health education, epidemiology, disaster management, and geriatrics. The standards specify the knowledge and skills needed by professionals pursuing careers in this pathway. Sample occupations associated with this pathway are Community Health Worker, Community Health Worker, Epidemiologist, Health Educator, Advocate, and Environmentalist. The prerequisites for this course are Introduction to Healthcare Science Technology and Essentials of Healthcare.

**Course Standard 1**

**HS-APH-1**

The following standard is included in all CTAE courses adopted for the Career Cluster/Pathways. Teachers should incorporate the elements of this standard into lesson plans during the course. The topics listed for each element of the standard may be addressed in differentiated instruction matching the content of each course. These elements may also be addressed with specific lessons from a variety of resources. This content is not to be treated as a unit or separate body of knowledge but rather integrated into class activities as applications of the concept.

**Standard: Demonstrate employability skills required by business and industry.**

The following elements should be integrated throughout the content of this course.

**1.1 Communicate effectively through writing, speaking, listening, reading, and interpersonal abilities.**

Person-to-Person Etiquette	Telephone and Email Etiquette	Cell Phone and Internet Etiquette	Communicating At Work	Listening
Interacting with Your Boss	Telephone Conversations	Using Blogs	Improving Communication Skills	Reasons, Benefits, and Barriers
Interacting with Subordinates	Barriers to Phone Conversations	Using Social Media	Effective Oral Communication	Listening Strategies
Interacting with Co-workers	Making and Returning Calls		Effective Written Communication	Ways We Filter What We Hear
Interacting with Suppliers	Making Cold Calls		Effective Nonverbal Skills	Developing a Listening Attitude
	Handling Conference Calls		Effective Word Use	Show You Are Listening
	Handling Unsolicited Calls		Giving and Receiving Feedback	Asking Questions
				Obtaining Feedback
				Getting Others to Listen

Nonverbal Communication	Written Communication	Speaking	Applications and Effective Résumés
Communicating Nonverbally	Writing Documents	Using Language Carefully	Completing a Job Application
Reading Body Language and mixed Messages	Constructive Criticism in Writing	One-on-One Conversations	Writing a Cover Letter
Matching Verbal and Nonverbal communication		Small Group Communication	Things to Include in a Résumé

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Improving Nonverbal Indicators		Large Group Communication	Selling Yourself in a Résumé
Nonverbal Feedback		Making Speeches	Terms to Use in a Résumé
Showing Confidence Nonverbally		Involving the Audience	Describing Your Job Strengths
Showing Assertiveness		Answering Questions	Organizing Your Résumé
		Visual and Media Aids	Writing an Electronic Résumé
		Errors in Presentation	Dressing Up Your Résumé

### 1.2 Demonstrate creativity by asking challenging questions and applying innovative procedures and methods.

Teamwork and Problem Solving	Meeting Etiquette
Thinking Creatively	Preparation and Participation in Meetings
Taking Risks	Conducting Two-Person or Large Group Meetings
Building Team Communication	Inviting and Introducing Speakers
	Facilitating Discussions and Closing
	Preparing Visual Aids
	Virtual Meetings

### 1.3 Exhibit critical thinking and problem solving skills to locate, analyze and apply information in career planning and employment situations.

Problem Solving	Customer Service	The Application Process	Interviewing Skills	Finding the Right Job
Transferable Job Skills	Gaining Trust and Interacting with Customers	Providing Information, Accuracy and Double Checking	Preparing for an Interview	Locating Jobs and Networking
Becoming a Problem Solver	Learning and Giving Customers What They Want	Online Application Process	Questions to Ask in an Interview	Job Shopping Online
Identifying a Problem	Keeping Customers Coming Back	Following Up After Submitting an Application	Things to Include in a Career Portfolio	Job Search Websites
Becoming a Critical Thinker	Seeing the Customer's Point	Effective Résumés:	Traits Employers are Seeking	Participation in Job Fairs
Managing	Selling Yourself and the Company	Matching Your Talents to a Job	Considerations Before Taking a Job	Searching the Classified Ads
	Handling Customer Complaints	When a Résumé Should be Used		Using Employment Agencies
	Strategies for Customer Service			Landing an Internship
				Staying Motivated to Search

### 1.4 Model work readiness traits required for success in the workplace including integrity, honesty, accountability, punctuality, time management, and respect for diversity.

Workplace Ethics	Personal Characteristics	Employer Expectations	Business Etiquette	Communicating at Work
Demonstrating Good Work Ethic	Demonstrating a Good Attitude	Behaviors Employers Expect	Language and Behavior	Handling Anger
Behaving Appropriately	Gaining and Showing Respect	Objectionable Behaviors	Keeping Information Confidential	Dealing with Difficult Coworkers
Maintaining Honesty	Demonstrating Responsibility	Establishing Credibility	Avoiding Gossip	Dealing with a Difficult Boss

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Playing Fair	Showing Dependability	Demonstrating Your Skills	Appropriate Work Email	Dealing with Difficult Customers
Using Ethical Language	Being Courteous	Building Work Relationships	Cell Phone Etiquette	Dealing with Conflict
Showing Responsibility	Gaining Coworkers' Trust		Appropriate Work Texting	
Reducing Harassment	Persevering		Understanding Copyright	
Respecting Diversity	Handling Criticism		Social Networking	
Making Truthfulness a Habit	Showing Professionalism			
Leaving a Job Ethically				

### 1.5 Apply the appropriate skill sets to be productive in a changing, technological, diverse workplace to be able to work independently and apply team work skills.

Expected Work Traits	Teamwork	Time Management
Demonstrating Responsibility	Teamwork Skills	Managing Time
Dealing with Information Overload	Reasons Companies Use Teams	Putting First Things First
Transferable Job Skills	Decisions Teams Make	Juggling Many Priorities
Managing Change	Team Responsibilities	Overcoming Procrastination
Adopting a New Technology	Problems That Affect Teams	Organizing Workspace and Tasks
	Expressing Yourself on a Team	Staying Organized
	Giving and Receiving Constructive Criticism	Finding More Time
		Managing Projects
		Prioritizing Personal and Work Life

### 1.6 Present a professional image through appearance, behavior and language.

On-the-Job Etiquette	Person-to-Person Etiquette	Communication Etiquette	Presenting Yourself
Using Professional Manners	Meeting Business Acquaintances	Creating a Good Impression	Looking Professional
Introducing People	Meeting People for the First Time	Keeping Phone Calls Professional	Dressing for Success
Appropriate Dress	Showing Politeness	Proper Use of Work Email	Showing a Professional Attitude
Business Meal Functions		Proper Use of Cell Phone	Using Good Posture
Behavior at Work Parties		Proper Use in Texting	Presenting Yourself to Associates
Behavior at Conventions			Accepting Criticism
International Etiquette			Demonstrating Leadership
Cross-Cultural Etiquette			
Working in a Cubicle			

### Support of CTAE Foundation Course Standards and Georgia Standards of Excellence L9-10RST 1-10 and L9-10WHST 1-10:

Georgia Standards of Excellence ELA/Literacy standards have been written specifically for technical subjects and have been adopted as part of the official standards for all CTAE courses.

## Course Standard 2

### HS-APH-2

**Describe the context and scope of public health on improving health and quality of life in personal, community (including local, state, and federal health department), and the global population based on the ten essentials of public health.**

- 2.1 Identify patterns in the written text about the history, philosophy, and services provided by public health.
- 2.2 Identify the 10 essential services of public health:
  - Monitor health status to identify and solve community health problems.
  - Diagnose and investigate health problems and health hazards in the community.
  - Inform, educate, and empower people about health issues.
  - Mobilize community partnerships and action to identify and solve health problems.
  - Develop policies and plans that support individual and community health efforts.
  - Enforce laws and regulations that protect health and ensure safety.
  - Link people to needed personal health services and assure the provision of health care when otherwise unavailable.
  - Assure competent public and personal health care workforce.
  - Evaluate effectiveness, accessibility, and quality of personal and population-based health services.
  - Research for new insights and innovative solutions to health problems.
- 2.3 Define the core functions of public health and how they relate to the ten essential services of public health (assessment, policy development, and assurance).
- 2.4 Explain the career pathways as they related to the essential services provided by public health.
- 2.5 Define the ethical obligations required of a public health practitioner versus the community as a whole.
- 2.6 Outline the phases of community mobilization as they relate to public health communication (planning, awareness, taking action, and monitoring and evaluating).
- 2.7 Analyze the levels of collaboration (networking, cooperation, coordination and collaboration) required for effective communication of information about personal risk behaviors and primary prevention of common public health concerns.
- 2.8 Define the broad spectrum of enforcement activities in areas of public health concern, including, but not limited to the protection of drinking water; enforcement of clean air standards; regulation of care provided in health care facilities and programs; re-inspection of workplaces following safety violations; review of new drug, biologic, and medical device applications; enforcement of laws governing the sale of alcohol and tobacco to minors; seat belt and child safety seat usage; and childhood immunizations.
- 2.9 Explain how public health can utilize health information and health communications to improve the health of populations.
- 2.10 Connect the relationship that economics has with the implementation of public health practices and strategies.

## Course Standard 3

### HS-APH-3

**Explain how epidemiology is the basic science of public health and describe how it is used to study, prevent, and control disease.**

- 3.1 Summarize the major objectives of epidemiologic methods.
- 3.2 Discuss the classification of notifiable diseases and the basic steps of an epidemiological investigation.
- 3.3 Describe the application of epidemiology in the study of chronic diseases.

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- 3.4 Differentiate between the uses of the following terms in defining disease: prevalence rates, incidence rates, death rates, disease distribution, and epidemic curves.
- 3.5 Differentiate between the following epidemiologic studies: intervention studies, cohort studies, and case control studies.
- 3.6 Analyze sources of potential errors in epidemiologic study.
- 3.7 Discuss basic ethical and legal principles pertaining to the collection, maintenance and use and reporting of epidemiologic data.
- 3.8 Apply basic knowledge of statistics to identify the p-value, statistical significance, and confidence intervals related to an epidemiologic study.
- 3.9 Evaluate the role of data in public health and the strengths and limitations of epidemiologic reports.
- 3.10 Analyze current studies in Georgia and the methodology being utilized in those studies.

### Course Standard 4

#### HS-APH-4

#### **Differentiate the means of transmission as they relate to the biomedical basis of disease for infectious, chronic, and genetic diseases.**

- 4.1 Define common infectious agents associated with public health.
- 4.2 Construct the chain of infection using the following concepts: pathogen, reservoir, place of exit, method of transmission, port of entry, and susceptible host.
- 4.3 Develop a logical argument for the benefit of vaccination and compare these arguments to those related to fear of vaccination.
- 4.4 Investigate the role vaccination has with the prevention of diseases such as rabies, smallpox, measles, and polio.
- 4.5 Identify patterns of the emergence and resurgence of various infectious diseases (e.g. AIDS, HIV, West Nile Virus, Influenza, MRSA, and TB).
- 4.6 Analyze the public health response to emerging infections.
- 4.7 Identify common chronic diseases (e.g. cardiovascular diseases, cancer, diabetes, arthritis, and Alzheimer's disease).
- 4.8 Analyze the role that public health professionals play with the reduction of risk and prevention of common chronic diseases.
- 4.9 Define terminology associated with genetic diseases.
- 4.10 Investigate the relationship that patterns of inheritance have with the development of disease.
- 4.11 Critique the potential ethical issues related to genetics and genomics with the prevention and training of genetically associated diseases.

### Course Standard 5

#### HS-APH-5

#### **Identify how psychosocial factors affect health behavior.**

- 5.1 Explain the relationship of demographic factors on an individual's health status.
- 5.2 Evaluate the effects of socioeconomic status (SES) on the health of population groups.
- 5.3 Investigate current health behavior theories and the role in the development of health intervention and promotion programs.
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- 5.5 Assess, interpret, and evaluate public health data using information technology.
- 5.6 Analyze evidence-based practices applied to social and behavioral public health interventions.
- 5.7 Research the concept of social determinants of public health.

## Course Standard 6

### HS-APH-6

**Discuss the significance that obesity, substance abuse (including tobacco usage), and mental health disorders have with relation to the development of illness.**

- 6.1 Identify and discuss the major diseases caused by smoking and the estimated number of annual deaths.
- 6.2 Define the biomedical basis for smoking's harmful effects of the body.
- 6.3 Critically analyze the relationships between advertising of tobacco products, historical trends in smoking, and regulatory restriction on smoking.
- 6.4 Investigate the epidemiological research that supports the link between obesity and the development of disease.
- 6.5 Define the diseases commonly associated with obesity.
- 6.6 Summarize the role that healthy eating, physical activity, and healthy minds have with confronting the obesity epidemic.
- 6.7 Define the most commonly diagnosed mental health illnesses.
- 6.8 Connect the epidemiologic evidence linking mental health illnesses with substance abuse, injuries, and illnesses.
- 6.9 Differentiate between the treatment of mental health illness in childhood, adults, and older adults.
- 6.10 Summarize the common causes and prevention of mental health illness.
- 6.11 Assess the various methods of treatment for mental health illness.
- 6.12 Research programs and initiative available through the State of Georgia Department of Public Health.

## Course Standard 7

### HS-APH-7

**Investigate the reasons child and maternal health is a high priority in public health.**

- 7.1 Cite several studies depicting improvement in child and maternal health through United States and world history.
- 7.2 Analyze infant mortality rates (IMR) in different countries and among different races.
- 7.3 Cite evidence supporting infant mortality as either a social or a health problem.
- 7.4 Summarize programs developed to decrease the IMR including those targeting congenital malformations, preterm birth, and sudden infant death syndrome.
- 7.5 Discuss family planning and prevention of adolescent pregnancy related to abstinence and comprehensive sex education in schools.
- 7.6 Analyze the development of nutritional programs for women and children.
- 7.7 Critique the effectiveness of immunization programs in the prevention of infectious diseases.
- 7.8 Evaluate results of the ongoing National Children's Study.
- 7.9 Investigate and analyze data regarding women and children's health and Independent Medical Researcher (IMR) in local community and state.

## Course Standard 8

### HS-APH-8

**Assess that injuries are not accidents, are a major public health issue, and dependent on people's behavior and environment.**

- 8.1 Research the laws and regulations designed to protect health and safety at the local, state, and federal public health level.
- 8.2 Analyze the relationship of epidemiology and accident prevention considering the host, agent, and environment, primary, secondary, and tertiary prevention.
- 8.3 Cite evidence of government and public campaigns effective in decreasing motor vehicle injuries.
- 8.4 Investigate current issues of poisoning including fatalities related to prescription drugs.
- 8.5 Critique data collected and studies conducted on fire arm injuries and deaths in the United States.
- 8.6 Analyze data related to leading causes of childhood accidents and prevention programs.
- 8.7 Investigate current issues surrounding student athletes' safety including concussion and traumatic brain injury prevention (TBI) and sudden cardiac death.
- 8.8 Investigate domestic violence including child abuse and domestic partner violence for risk factors and prevention programs.
- 8.9 Define agencies responsible for enforcement of public health policy at the local, state, and federal level.

## Course Standard 9

### HS-APH-9

**Summarize the relationship between role of environmental and occupational health with the prevention of injury and illnesses.**

- 9.1 Identify and describe the role that the government has with the establishment of environmental health.
- 9.2 Define the governmental agencies responsible for the various environmental public health concerns at the local, state, and federal level.
- 9.3 Critically analyze the relationship between the use of pesticides and industrial chemicals in the environment and the impact on both humans and the ecological system.
- 9.4 Investigate the scope of occupational injuries, illnesses, and fatalities since the 19<sup>th</sup> century.
- 9.5 Identify the governmental agencies responsible for the development and enforcement of occupational safety and health regulations.
- 9.6 Identify the governmental agencies responsible for conducting research related to occupational health injuries and illness prevention.
- 9.7 Classify patterns in the regulatory process for both environmental and occupational standards.
- 9.8 Critically analyze the process of risk-benefit analysis.

## Course Standard 10

### HS-APH-10

**Investigate the relationship between medical care and public health.**

- 10.1 Investigate the concept of medical care as a public health issue.
- 10.2 Differentiate between patient diagnosis (individual medical care) versus community diagnosis (public health).
- 10.3 Cite evidence supporting the responsibility of public health regarding specific areas of medical care including communicable diseases, emergency services, veterans, and prisoners.

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- 10.4 Assess the conflict between public health and the medical profession including insurance, indigent care, and school children.
- 10.5 Discuss and critique the major trends in government health insurance programs and laws including The Patient Protection and Affordable Care Act of 2010.
- 10.6 Identify the criteria for evaluating health systems including issues of access, quality, and cost.
- 10.7 Investigate the governmental licensing and regulation system of health care professionals.
- 10.8 Describe the fundamental concepts and features of project implementation, including planning, assessment and evaluation and determine methods used to evaluate the effectiveness, accessibility and quality of personal and population-based health services.
- 10.9 Investigate prominent ethical and legal issues in medical care.

### Course Standard 11

#### HS-APH-11

**Describe the fundamental concepts and applications of health services research as they intersect public health practice with medical care, institutions of higher learning, and governmental agencies at the local, state, and federal level.**

- 11.1 Connect public health research with institutions of higher learning, and critique this role.
- 11.2 Identify the institutions of higher learning and agencies at the local, state, and federal level that are responsible for initiating research, participating in research by others, reporting results, and implementing policy based on these results.
- 11.3 Analyze the broad spectrum of public health research that spans from practical field-based efforts to foster change in public health practice, to more academic efforts to encourage new directions in scientific research.
- 11.4 Define the scientific methods and terminology used in public health to conduct research, including, but not limited to: epidemiology, statistical analyses, behavioral health, environmental health, occupational health, global health, and public health policy.
- 11.5 Design a grant application to synthesize the process of developing a public health research project.
- 11.6 Analyze public health research publications for information establishing innovative solutions to public health problems.
- 11.7 Summarize how public health research is critical for each of the nine other essential areas of public health.
- 11.8 Critique the internal capacity of local, state, and federal agencies to mount timely epidemiological and health policy analyses and conduct health systems research.
- 11.9 Discuss the ethical issues in research.

### Course Standard 12

#### HS-APH-12

**Research the health needs of the elderly population and how changing trends, medical costs, and existing programs can result in a positive health outcome.**

- 12.1 Analyze trends in the aging of the population.
- 12.2 Identify and research general approaches to maximizing health in the elderly population.
- 12.3 Evaluate and investigate the effectiveness of programs targeting the following identified health risks of the elderly populations: medications, osteoporosis, falls, vision and hearing impairment, oral health, and Alzheimer's and other dementias.



- 12.4 Analyze medical costs of the elderly population and discuss current and future payment strategies.

### Course Standard 13

#### HS-APH-13

##### **Describe the role that public health has with emergency preparedness planning.**

- 13.1 Define commonly used terminology associated with emergency preparedness planning.
- 13.2 Investigate the relationship that public health organizations at the local, state, and federal level with the establishment of an Incident Command System during a disaster response.
- 13.3 Identify the different types of disasters (man-made, natural, biological, and technological.)
- 13.4 Investigate recent disasters and analyze the public health responses and how they may have prevented potential spread of disease.
- 13.5 Summarize the role that the Federal Emergency Management Agency (FEMA) and the National Guard have for emergency response, preparedness, and planning purposes.
- 13.6 Define the key principles of emergency planning and preparedness (e.g. sharing of information, resource management, warnings of evacuations, warnings must be consistent, coordination of search and rescue efforts, involvement of mass media, triage, casualty distribution, tracking of patients and survivors, establishment of care of patients, management of volunteers and donations, and unanticipated problems).