

## **Core Competencies**

As specified by the Education Committee of ASPH, the competencies required of all graduates with an MPH are defined in terms of the discipline specific areas of biostatistics, environmental health sciences, epidemiology and health policy and management. The purpose of the curricular content that focuses on the set of core competencies is to prepare students to function as effective participants in a team or group that addresses a public health problem or issue. The competencies with respect to courses that comprise the core curriculum are as follow.

### **Biostatistics**

After completing BSE 5163 Biostatistical Methods I, the student should be able to:

- Describe the roles biostatistics serves in the discipline of public health;
- distinguish among the different measurement scales and the implications for selection of statistical methods to be used based on these distinctions;
- apply descriptive techniques commonly used to summarize public health data;
- describe basic concepts of probability, random variation and commonly used statistical probability distributions;
- apply common statistical methods for inference
- describe preferred methodological alternative to commonly used statistical methods when assumptions are violated;
- apply descriptive and inferential methodologies according to the type of study design for answering a particular research question;
- interpret results of statistical analyses found in public health studies;
- develop written and oral presentations based on statistical analyses for both public health professionals and educated lay audiences;
- apply basic informatics techniques with vital statistics and public health records in the description of public health characteristics and in public health research and evaluation.

### **Epidemiology**

After completing BSE 5113 Principles of Epidemiology the student should be able to:

- Explain the importance of epidemiology for informing scientific, ethical, economic and political discussion of health issues
- describe a public health problem in terms of magnitude, person, time and place
- apply the basic terminology and definitions of epidemiology
- identify key sources of data for epidemiologic purposes
- calculate basic measures
- evaluate the strengths and limitations of epidemiologic reports
- draw appropriate inferences from epidemiologic data
- communicate epidemiologic information to lay and professional audiences
- comprehend basic ethical and legal principles pertaining to the collection, maintenance, use and dissemination of epidemiologic data
- identify the principles and limitations of public health screening programs.

## **Health Policy and Management**

After completing HAP 5453 U.S. Health Care Systems, the student should be able to:

- Identify the main components of the organization, financing and delivery of health services and public health system in the U.S.
- Describe the policy process for improving the health status of populations;
- Describe the legal and ethical bases for public health and health services;
- Apply quality and performance improvement concepts to address organizational performance issues;
- Demonstrate leadership skills for building partnerships;
- Apply principles of strategic planning and marketing to public health;
- Communicate health policy and management issues using appropriate channels and technologies;
- Apply the principles of program planning, development, budgeting, management and evaluation in organizational and community initiatives;
  
- Explain methods of ensuring community health and safety preparedness;
- Apply “systems thinking” for resolving organizational problems.

## **Social and Behavioral Sciences**

After completing HPS 5213 Social and Behavioral Sciences in Public Health the student should be able to:

- Describe the role of social and community factors in both the onset and solution of public health problems;
- Identify the causes of social and behavioral factors that affect health of individuals and populations;
- Identify basic theories, concepts and models from a range of social and behavioral disciplines that are used in public health research and practice;
- Apply ethical principles to public health program planning, implementation and evaluation
- Specify multiple targets and levels of intervention for social and behavioral science programs and/or policies.
- Identify individual, organizational and community concerns, assets, resources and deficits for social and behavioral science interventions;
- Apply evidence-based approaches in the development and evaluation of social and behavioral science interventions;
- Describe the merits of social and behavioral science interventions and policies;
- Describe steps and procedures for the planning, implementation and evaluation of public health programs, policies and interventions;
- Identify critical stakeholders for the planning, implementation and evaluation of public health programs, policies and interventions.

## **Environmental Health Sciences**

After completing OEH 5013 Environmental Health the student should be able to:

- Specify approaches for assessing, preventing and controlling environmental hazards that pose risk to human health and safety;
- Describe the direct and indirect human, ecological and safety effects of major environmental and occupational agents;
- Specify current environmental risk assessment methods;
- Describe genetic, physiologic and psychosocial factors that affect susceptibility to adverse health outcomes following exposure to environmental hazards;
- Discuss various risk management and risk communication approaches in relation to issues of environmental justice and equity;
- Explain the general mechanisms toxicity in eliciting a toxic response to various environmental exposures;
- Develop a testable model of environmental insult and
- Describe federal and state regulatory programs, guidelines and authorities that control environmental health issues.