**Master of Public Health Core Competencies**

**Revised 2013**

**BIOSTATISTICS**

1. Understand the roles biostatistics serves in the discipline of public health.
2. Comprehend basic concepts of probability, random variation and commonly used statistical probability distributions in public health.
3. Identify preferred methodological alternatives to commonly used statistical methods when assumptions are not met.
4. Understand the different measurement scales and the implications for selection of statistical methods to be used based on these distinctions.
5. Understand and apply descriptive techniques commonly used to summarize public health data.
6. Use data management and statistical software to analyze the basic relationships between risk factors and outcome data.
7. Apply descriptive and inferential methodologies according to the type of study design for answering a particular research question.
8. Interpret results of statistical analyses found in public health studies.

**COMMUNICATION**

1. Evaluate the scientific literature related to public health by analyzing the appropriateness of study design, quality of data, methodological strategies and interpretation of results.
   i. Weekly source assignments in Health Care in US
   ii. Literature review matrix in Capstone
2. Interpret and effectively present demographic, statistical, programmatic, scientific and epidemiological information for use by professional and lay audiences.
   i. Policy brief assignment in HC in US
   ii. Problem statement in Capstone
3. Ensure that health literacy and issues of cultural competence and difference are considered and integrated throughout public health communication strategies.
4. Effectively communicate the importance of evidence-based public health policies to a variety of stakeholders, including policy makers and funders.
   i. Op Ed assignment in Capstone
5. Communicate in writing and orally, in person and through electronic means, with professional, linguistic and cultural proficiency.

**ENVIRONMENTAL HEALTH**

1. Identify/characterize various environmental hazards (chemical, biological and physical) and their sources, pathways of exposure including vectors of transmission and kinetics and dynamics in the human/animal body.
2. Describe the factors (age and psychological, nutritional, health and socioeconomic status [environmental justice] etc.) that determine human/animal susceptibility to these agents.
3. Identify the mechanism of action, adverse health effects, local and global impacts, safety standards and ways (primary and secondary) to prevent the effects of environmental hazards in susceptible populations.
4. Discuss details of risk assessment and management including the process of policy development aimed at mitigating the effects of various environmental hazards.
5. Analyze how environmental policies impact public health.
6. Cultivate risk communication and advocacy skills in communicating environmental health and policy issues.

**EPIDEMIOLOGY**

1. Define and appraise the health status of populations, determinants of health and illness, and factors contributing to health promotion and disease prevention.
2. Define, calculate, and interpret measures of disease frequency and measures of association between risk factors and disease.
3. Appropriately select and use information technology to identify, locate, and access health-related data; accurately evaluate the integrity of the data and identify gaps in data. Use these data to inform public health decision-making.
4. Recognize the basic ethical and legal principles pertaining to the collection, maintenance, use, and dissemination of epidemiologic data, including the history of epidemiology as the central science of public health.

5. Describe, analyze and evaluate the major epidemiologic descriptive and analytic study designs, the strengths and limitations of each, the major sources of bias in epidemiologic research and ways to evaluate and reduce these biases.

6. Critically review the scientific literature, interpret results of epidemiologic studies, synthesize the findings across studies, including the limitations and public health implications of the research, and make appropriate public health recommendations based on current knowledge.

7. Articulate the role of epidemiology for informing scientific, ethical, economic, and political discussions of health issues, and in preserving and improving public health.

**HEALTH POLICY AND MANAGEMENT**

1. Understand and evaluate the organization, financing, and delivery of U.S. health care and public health systems.

2. Evaluate how potential and/or actual changes to public policy affect public health systems and compare these effects at the state, national, and international levels.

3. Design and utilize strategies to measure health impact and evaluate organizational performance.

4. Examine how professional ethics and practices relate to equity, accountability, and health outcomes in culturally diverse communities.

5. Design, implement, and evaluate at least one community based public health program

**SOCIAL AND BEHAVIORAL SCIENCE**

1. Analyze the interrelationships among the social determinants and behavioral factors that affect the health and quality of life of people in their communities.

2. Identify basic theories, concepts, and models from a range of social and behavioral disciplines that are used in public health research and practice.

3. Describe public health interventions at the primary, secondary, and tertiary level.

4. Understand and apply qualitative and quantitative approaches in the development of evidence-based public health interventions.

5. Specify multiple targets and levels of intervention for social and behavioral science programs and/or policies.

6. Develop public health programs and strategies responsive to the diverse cultural values and traditions of the communities being served.

**HEALTH PROMOTION AND POLICY EMPHASIS SPECIFIC**

1. Identify individual, organizational, and community concerns, resources, and needs for community-based interventions.

2. Describe steps and procedures for the planning, implementation, and evaluation of public health programs, policies, and interventions.

3. Understand the legal and ethical dilemmas posed by public health policy implementation.

4. State policy options and write clear and concise policy statements.

5. Identify, interpret, and understand the process for implementing public health laws, regulations, and policies related to specific programs.

6. Demonstrate the skills necessary to build partnerships and work as an effective member of a diverse and/or interdisciplinary team.

7. Be prepared to be a key participant in the development and implementation of emergency response plans.

**VETERINARY PUBLIC HEALTH EMPHASIS SPECIFIC**

1. Understand the key role that veterinarians play in the physical, mental, and social well-being of humans.

2. Define and understand the term “zoonosis.”

3. Define the key concepts in zoonotic disease diagnosis, control, and prevention.

4. Evaluate a surveillance system for important zoonosis.

5. Clearly identify veterinarians’ legal responsibilities in reporting zoonotic disease outbreaks and their interaction with the broader U.S. public health system.

6. Define bioterrorism.

7. Describe a veterinarian’s role in mitigation, disaster preparedness, response, and recovery as it relates to a bioterrorism event and be prepared to be a key participant in the development and implementation of an emergency response plan.

8. Describe a veterinarian’s role in food safety.