

## MASTER'S DEGREE COMPETENCIES

The MPH Student's public health knowledge, attitude, skills, and practice are evaluated against key public health competencies. The competencies for the MPH at OPHS are based on those approved by the Association of Schools of Public Health (ASPH) in 2006. By graduation, all MPH students must demonstrate ability to apply public health perspectives, knowledge, and skills in five core areas (biostatistics, epidemiology, environmental health science, health policy and management, social and behavioral health sciences) and seven cross-cutting areas (communication and informatics, diversity and culture, leadership, professionalism, program planning, systems thinking, and public health biology). In addition, MPH students are evaluated on competencies associated with their chosen specialization: epidemiology, health policy and management, Native Hawaiian and indigenous health, or social and behavioral health sciences. Competencies are mastered through coursework, seminars, practica, public health projects, experiences, and other activities of the MPH program. Knowledge and skills are assessed by means of student performance in the classroom, and application is assessed through the capstone experience made up of the 1) practicum, 2) final paper, and 3) final oral examination.

Upon completion on the MPH program at the University of Hawai'i, the graduate should master the following competencies:

### EPIDEMIOLOGY COMPETENCIES

- Apply the basic terminology and definitions of epidemiology used to identify patterns of disease and injury in human populations and apply epidemiological methods to the identification and control of health problems.
- Identify key sources of data and apply descriptive techniques commonly used to summarize public health data used to inform scientific, ethical, economic, and political discussion of health issues.
- Calculate basic epidemiological measures, apply common statistical methods, and interpret results of statistical analyses used in public health studies.

Additional criteria for students in the epidemiology specialization:

- Identify the epidemiological dimensions of the major causes of morbidity and mortality regionally, nationally, and internationally with particular emphasis on chronic and infectious disease.
- Identify public health practices for disease control including surveillance, screening and outbreak investigation.
- Identify practices for disease detection including the use of biomarkers and molecular

biology.

- Demonstrate proficiency in computer-based data collection, management and analysis using major statistical software and fundamental strategies for biostatistical analysis.
- Demonstrate application of epidemiology knowledge and skills through a practicum, by 1) developing and achieving practicum learning objectives; 2) demonstrating application of dimensions of epidemiology in the field; 3) completing an epidemiological practicum project; and 4) articulate how the project contributes to the field of public health.
- Demonstrate the skills in the synthesis of epidemiological knowledge and practice by including in the final paper/oral: 1) a critical assessment of the epidemiological data and literature relevant to a public health problem or topic; 2) an overview of the existing studies that address the public health problem or topic; 3) an overview of the practicum project and application of appropriate approach; 4) presentation and interpretation of the findings; 5) implications for public health.

Criteria to evaluate mastery of these competencies:

- Communicate epidemiologic information to lay and professional audiences.
- Evaluate strengths and limitations of epidemiologic reports.
- Describe a public health problem in terms of magnitude, person, place, and time.
- 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 programs.

## HEALTH POLICY AND MANGEMENT COMPETENCIES

Health policy and management (HPM) is a multidisciplinary field of inquiry and practice concerned with the delivery, quality and costs of health care for individuals and populations. This definition assumes both a managerial and a policy concern with the structure, process and outcomes of health services including the costs, financing, organization, outcomes and accessibility of care.

The competencies are:

- Identify the main components and issues of the organization, financing and delivery of health services and public health systems in the U.S.
- Describe the legal and ethical bases for public health and health services.
- Apply the principles of program planning, development, budgeting, management and evaluation in organizational and community initiatives.
- Apply "systems thinking" for resolving organizations problems.

Additional competencies for students in the HPM specialization:

- Discuss the policy process for improving the health status of populations.
- Apply principles of strategic planning and marketing to public health.
- Apply quality and performance improvement concepts to address organizational performance issues.
- Communicate health policy and management issues using appropriate channels and technologies.
- Demonstrate leadership skills for building partnerships.

Criteria to evaluate the mastery of these competencies are:

- Demonstrate application of HPM knowledge and skills through a practicum, by 1) developing and achieving practicum learning objectives.
- Compile a portfolio of deliverables (e.g., papers, presentations) from MPH coursework focusing on the relevant competencies.
- Demonstrate skills in the synthesis of HPM knowledge and practice by including in the final paper/oral: 1) a critical assessment of the data and HPM literature relevant to a public health problem or topic; 2) an overview of the existing programs and policies that address the public health problem/topic; 3) presentation and interpretation of findings; and 4) implications for public health.

## NATIVE HAWAIIAN AND INDIGENOUS HEALTH COMPETENCIES

Because the historical and political context for indigenous people differs substantially from their mainstream population in which they are domestically dependent, public health professionals serving Indigenous Peoples may require an additional layer of skills and competencies. The competencies: a) define the discipline of indigenous public health; b) provide a framework for indigenous public health training and career development; and c) entwine traditional knowledge - including relationship-based and indigenous value-driven ideologies and protocols - with current public health acumen, to include indigenous viewpoints, community-level involvement, and systems-wide change management. These indigenous public health competencies are central to the development of the Native Hawaiian and Indigenous Health (NHIH) specialization.

The competencies are:

- Describe indigenous peoples' health in a historical context and analyze the impact of colonial processes on health outcomes.
- Analyze key comparative health indicators and social determinants of health for indigenous peoples.
- Critically evaluate indigenous public health policy and programs.

- Apply the principles of economic evaluation to indigenous programs with a particular focus on the allocation of resources relative to need.
- Demonstrate a reflexive public health practice for indigenous peoples' health contexts.
- Demonstrate a disease prevention strategy which values and incorporates indigenous peoples' traditional knowledge.

## SOCIAL AND BEHAVIORAL HEALTH SCIENCES COMPETENCIES

- Identify basic theories, concepts and models from a range of social and behavioral disciplines that are used in public health research and practice.
- Identify the causes of social and behavioral factors that affect health of individuals and populations.
- Describe the merits of social and behavioral science interventions and policies.
- Apply evidence-based approaches in the development and evaluation of social and behavioral science interventions.

Additional competencies for students in the SBHS specialization:

- Identify individual, organizational and community concerns, assets, resources and deficits for social and behavioral science interventions.
- Describe the role of social and community factors in both the onset and solution of public health problems.
- Specify multiple targets and levels of intervention for social and behavioral science programs and/or policies.
- Identify critical stakeholders for the planning, implementation and evaluation of public health programs, policies and interventions.
- Describe steps and procedures for the planning, implementation and evaluation of public health programs, policies and interventions.
- Apply ethical principles to public health program planning, implementation and evaluation.
- Demonstrate application of SBHS knowledge and skills through a practicum, by 1) developing and achieving a practicum learning objectives; 2) demonstrating application of dimensions of SBHS in the field; 3) completing a practicum project; and 4) articulate how the project contributes to the field of public health.
- Demonstrate skills in the synthesis of SBHS knowledge and practice by including in the final paper/oral: 1) a critical assessment of the data and SBHS literature relevant to a public health problem or topic; 2) an overview of the existing programs and policies that address the public health problem/topic; 3) an overview of the practicum project and application of appropriate approach; 4) presentation and interpretation of findings; and

5) implications for public health.

## **BIOSTATISTICS COMPETENCY**

Apply basic statistical methods to address, analyze and solve problems in public health.

Criteria to evaluate the mastery of this competency:

- Describe the roles of biostatistics in the discipline of public health.
- Describe the basic biostatistics concepts such as summary statistics, probability, and statistic inference.
- Apply exploratory data analysis and descriptive statistics to summarize public health data.
- Apply common statistics methods to analyze public health data.
- Interpret results of statistical analyses found in public health studies.

## **ENVIRONMENTAL HEALTH COMPETENCY**

Describe how environmental factors (biological, physical, and chemical) affect the health of a community.

Criteria to evaluate the mastery of this competency:

- Describe the direct and indirect human, ecological and safety effects of major environmental and occupational agents.
- Describe genetic, physiologic and psychosocial factors that affect susceptibility to adverse health outcomes following exposure to environmental hazards.
- Describe federal and state regulatory programs, guidelines and authorities that control environmental health issues.
- Specify current environmental risk assessment methods/technology.
- Specify approaches for assessing, preventing and controlling environmental hazards that pose risks to human health and safety.

## **DIVERSITY AND CULTURE COMPETENCY**

Explain why cultural competence alone cannot address health disparities; be able to interact with both diverse individuals and groups on public health issues.

Criteria to evaluate the mastery of this competency:

- Describe the roles of history, power, privilege and structural inequality in producing health disparities.
- Explain how professional ethics and practices relate to equity and accountability in

diverse populations.

- Differentiate among availability, acceptability, and accessibility of health care across diverse populations.
- Demonstrate ability to interact effectively in diverse groups in class, practicum, student governance, and committees.

## LEADERSHIP COMPETENCY

Organize community partnerships to create and communicate a shared vision for a changing future; discuss solutions to organizational and community challenges; and maximize motivation to reach public health goals.

Criteria to evaluate the mastery of this competency:

- Describe the attributes of leadership in public health.
- Articulate an achievable mission, set of core values, and vision.
- Engage in dialogue and learning from others to advance public health goals.

## PUBLIC HEALTH BIOLOGY COMPETENCY

Discuss how public health biology - the biological and molecular context of public health - impacts public health practice.

Criteria to evaluate the mastery of this competency:

- Specify the role of the immune system in population health.
- Explain the role of biology in the ecological model of population-based health.
- Apply biological principles to development and implementation of disease prevention, control, or management programs.

## SYSTEMS THINKING COMPETENCY

Recognize system-level properties that result from dynamic interactions among human and social systems and how they affect the relationships among individuals, groups, organizations, communities, and environments.

Criteria to evaluate the mastery of this competency:

- Identify characteristics of a system.
- Explain how systems (e.g., individuals, social networks, organizations, and communities) may be viewed as systems within systems in the analysis of public health problems.
- Discuss the effects of political, social and economic policies on public health systems at

the local, state, national, and international levels.

- Discuss the impact of global trends and interdependencies on public health related problems and systems.

## PROGRAM PLANNING COMPETENCY

Plan for the design, development, implementation, and evaluation of strategies to improve individual and community health.

Criteria to evaluate the mastery of this competency:

- Describe the tasks necessary to assure that program implementation occurs as intended.
- Explain how the findings of a program evaluation can be used.

## ETHICS AND PROFESSIONALISM COMPETENCY

Demonstrate ethical choices, values and professional practices implicit in public health decisions; consider the effect of choices on community stewardship, equity, social justice and accountability; and to commit to personal and institutional development.

Criteria to evaluate the mastery of this competency:

- Discuss sentinel events in the history and development of the public health profession and their relevance for practice in the field.
- Apply basic principles of ethical analysis (e.g. the Public Health Code of Ethics, human rights framework, other moral theories) to issues of public health practice and policy.
- Apply evidence-based principles and the scientific knowledge base to critical evaluation and decision-making in public health.
- Apply the core functions of assessment, policy development, and assurance in the analysis of public health problems and their solutions.
- Promote high standards of personal and organizational integrity, compassion, honesty and respect for all people.
- Distinguish between population and individual ethical considerations in relation to the benefits, costs, and burdens of public health programs.
- Embrace a definition of public health that captures the unique characteristics of the field (e.g., population-focused, community-oriented, prevention-motivated and rooted in social justice) and how these contribute to professional practice.
- Appreciate the importance of working collaboratively with diverse communities and constituencies (e.g., researchers, practitioners, agencies and organizations).
- Value commitment to lifelong learning and professional service including active

participation in professional organizations.

## COMMUNICATION AND INFORMATICS

Collect, manage and organize data to produce information and demonstrate ability to present this information in meaningful ways to difference audiences.

Criteria to evaluate the mastery of this competency:

- Describe how the public health information infrastructure is used to collect, process, maintain, and disseminate data.
- Describe how societal, organizational, and individual factors influence and are influenced by public health communities.
- Apply legal and ethical principles to the use of information technology and resources in public health settings.
- Demonstrate effective written and oral skills for communicating with different audiences in the context of professional public health activities.
- Use information technology to access, evaluate, and interpret public health data.

## MS COMPETENCIES

Additional competencies are required for master of science (MS) students. They are:

## EPIDEMIOLOGY

- Demonstration of an understanding of epidemiologic-specific theoretical constructs, research design, research methodology, and analytic strategies.
- Participation in an original research project that makes a contribution to the body of knowledge in epidemiology.

## SOCIAL AND BEHAVIORAL HEALTH SCIENCES

- Develop a study protocol detailing research questions, sampling strategies, and quantitative and/or qualitative research methods.
- Use the scientific model to design, conduct and report on a study about a question concerning the social social and behavioral health sciences.