Consortium of Eastern Ohio Master of Public Health
Public Health Competencies

Core Course Competencies

The Consortium of Eastern Ohio Master of Public Health program uses the **Association of Schools of Public Health (ASPH) Education Committee Master's Degree in Public Health Core Competency Development Project competencies, Version 2.3**, which was finalized August 2006. The MPH Curriculum Committee examined these competencies and decided to adopt them in 2007, replacing the the Council on Linkages Between Academia and Public Health Practice competencies that we have been using since 2001.

The primary reason the new competencies were adopted were that they were better suited to an academic program. The Council on Linkages competencies were targeted toward public health practitioners. The ASPH competencies were developed for graduating public health students. In addition, a new public health credentialing examination will be given for the first time in 2008—the new examination will incorporate these competencies.

The competencies are organized into two sections—discipline specific competencies (specific to a particular core course) and interdisciplinary/cross-cutting competencies. Here is the break down of each of these categories:

Discipline specific competencies	A. Biostatistics B. Environmental Health Sciences C. Epidemiology D. Health Policy and Management E. Social and Behavioral Sciences
Interdisciplinary/cross-cutting competencies	F. Communication and Informatics G. Diversity and Culture H. Leadership I. Public Health Biology J. Professionalism K. Program Planning L. Systems Thinking

Throughout this MPH program, you will see these competencies. Here are the points that you will encounter them:

- During orientation, you will be introduced to these competencies.
- At the end of each core course syllabus, there will be a listing of the competencies that are covered in the course.
- When student apply for the capstone project, a template will need to be completed, indicating the competencies that will be achieved during your project.
- At the end of the program, students will need to include in their portfolio the "end of the program competencies listing" that will indicate the competencies that have been achieved during every course in the program.

We indicate in each core course syllabus what we believe students will be accomplishing. Students will also notice the use of Bloom's taxonomy, where we indicate the level of competency we hope that students will achieve, based on the evaluation method being used. Students will define the competencies they hope to achieve in their capstone projects. Hopefully, by the end of the program, students will have at least attained the competencies that we have marked—and maybe even more!

Generalist Track Competencies

In addition, we have added our own generalist track competencies, based on the new Council on Linkages Between Academic and Public Health Practice competencies. These competencies are mainly achieved in the two general track courses, Public Health Practice and Issues and Grant Writing in Public Health Practice. These competencies were discussed at a curricular strategic planning meeting and adopted fall 2010.

References:
- *Association of Schools of Public Health. MPH Core Competency Development Project, August 2006.Available at:* http://www.asph.org/document.cfm?page=851 *Accessed August 1, 2011.*
- *Public Health Foundation. Core Competencies for Public Health Professionals, 2010. Available at:* http://www.phf.org/resourcestools/pages/core_public_health_competencies.aspx *Accessed August 1, 2011.*

PUBLIC HEALTH COMPETENCIES

Below is a summary of the public health competencies that we intend on covering in the MPH courses. We are using Bloom's taxonomy in each of your core course syllabi to indicate the level that the competency is covered in the course. We hope that you can accomplish what we have planned for you!

Bloom's Taxonomy Categories

- **Knowledge (K)**: Recall data or information.
- **Comprehension (C)**: Understand the meaning, translation, interpolation, and interpretation of instructions and problems. State a problem in one's own words.
- **Application (AP)**: Use a concept in a new situation or unprompted use of an abstraction. Applies what was learned in the classroom into novel situations in the work place.
- **Analysis (AN)**: Separates material or concepts into component parts so that its organizational structure may be understood. Distinguishes between facts and inferences.
- **Synthesis (S)**: Builds a structure or pattern from diverse elements. Put parts together to form a whole, with emphasis on creating a new meaning or structure.
- **Evaluation (E)**: Make judgments about the value of ideas or materials.

A. BIOSTATISTICS

Biostatistics is the development and application of statistical reasoning and methods in addressing, analyzing and solving problems in public health; health care; and biomedical, clinical and population-based research.

Competencies: Upon graduation a student with an MPH should be able to…

A. 1. Describe the roles biostatistics serves in the discipline of public health.

A. 2. Describe basic concepts of probability, random variation and commonly used statistical probability distributions.

A. 3. Describe preferred methodological alternatives to commonly used statistical methods when assumptions are not met.

A. 4. Distinguish among the different measurement scales and the implications for selection of statistical methods to be used based on these distinctions.

A. 5. Apply descriptive techniques commonly used to summarize public health data.

A. 6. Apply common statistical methods for inference.

A. 7. Apply descriptive and inferential methodologies according to the type of study design for answering a particular research question.

A. 8. 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.

A. 9. Interpret results of statistical analyses found in public health studies.

A. 10. Develop written and oral presentations based on statistical analyses for both public health professionals and educated lay audiences.

Discipline-specific Competencies *(continued)*

B. ENVIRONMENTAL HEALTH SCIENCES

Environmental health sciences represent the study of environmental factors including biological, physical and chemical factors that affect the health of a community.

Competencies: Upon graduation a student with an MPH should be able to…

B. 1. Describe the direct and indirect human, ecological and safety effects of major environmental and occupational agents.

B. 2. Describe genetic, physiologic and psychosocial factors that affect susceptibility to adverse health outcomes following exposure to environmental hazards.

B. 3. Describe federal and state regulatory programs, guidelines and authorities that control environmental health issues.

B. 4. Specify current environmental risk assessment methods.

B. 5. Specify approaches for assessing, preventing and controlling environmental hazards that pose risks to human health and safety.

B. 6. Explain the general mechanisms of toxicity in eliciting a toxic response to various environmental exposures.

B. 7. Discuss various risk management and risk communication approaches in relation to issues of environmental justice and equity.

B. 8. Develop a testable model of environmental insult.

Discipline-specific Competencies *(continued)*

C. EPIDEMIOLOGY

Epidemiology is the study of patterns of disease and injury in human populations and the application of this study to the control of health problems.

Competencies: Upon graduation a student with an MPH should be able to…

C. 1.	Identify key sources of data for epidemiologic purposes.
C. 2.	Identify the principles and limitations of public health screening programs.
C. 3.	Describe a public health problem in terms of magnitude, person, time and place.
C. 4.	Explain the importance of epidemiology for informing scientific, ethical, economic and political discussion of health issues.
C. 5.	Comprehend basic ethical and legal principles pertaining to the collection, maintenance, use and dissemination of epidemiologic data.
C. 6.	Apply the basic terminology and definitions of epidemiology.
C. 7.	Calculate basic epidemiology measures.
C. 8.	Communicate epidemiologic information to lay and professional audiences.
C. 9.	Draw appropriate inferences from epidemiologic data.
C. 10.	Evaluate the strengths and limitations of epidemiologic reports.

Discipline-specific Competencies *(continued)*

D. HEALTH POLICY AND MANAGEMENT

Health policy and management 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.

Competencies: Upon graduation a student with an MPH should be able to…

D. 1.   Identify the main components and issues of the organization, financing and delivery of health services and public health systems in the US.

D. 2.   Describe the legal and ethical bases for public health and health services.

D. 3.   Explain methods of ensuring community health safety and preparedness.

D. 4.   Discuss the policy process for improving the health status of populations.

D. 5.   Apply the principles of program planning, development, budgeting, management and evaluation in organizational and community initiatives.

D. 6.   Apply principles of strategic planning and marketing to public health.

D. 7.   Apply quality and performance improvement concepts to address organizational performance issues.

D. 8.   Apply "systems thinking" for resolving organizational problems.

D. 9.   Communicate health policy and management issues using appropriate channels and technologies.

D. 10.   Demonstrate leadership skills for building partnerships.

Discipline-specific Competencies *(continued)*

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E. SOCIAL AND BEHAVIORAL SCIENCES

The social and behavioral sciences in public health address the behavioral, social and cultural factors related to individual and population health and health disparities over the life course. Research and practice in this area contributes to the development, administration and evaluation of programs and policies in public health and health services to promote and sustain healthy environments and healthy lives for individuals and populations.

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Competencies: Upon graduation a student with an MPH should be able to…

E. 1. Identify basic theories, concepts and models from a range of social and behavioral disciplines that are used in public health research and practice.

E. 2. Identify the causes of social and behavioral factors that affect health of individuals and populations.

E. 3. Identify individual, organizational and community concerns, assets, resources and deficits for social and behavioral science interventions.

E. 4. Identify critical stakeholders for the planning, implementation and evaluation of public health programs, policies and interventions.

E. 5. Describe steps and procedures for the planning, implementation and evaluation of public health programs, policies and interventions.

E. 6. Describe the role of social and community factors in both the onset and solution of public health problems.

E. 7. Describe the merits of social and behavioral science interventions and policies.

E. 8. Apply evidence-based approaches in the development and evaluation of social and behavioral science interventions.

E. 9. Apply ethical principles to public health program planning, implementation and evaluation.

E. 10. Specify multiple targets and levels of intervention for social and behavioral science programs and/or policies.

Interdisciplinary/Cross-cutting Competencies

F. COMMUNICATION AND INFORMATICS

The ability to collect, manage and organize data to produce information and meaning that is exchanged by use of signs and symbols; to gather, process, and present information to different audiences in-person, through information technologies, or through media channels; and to strategically design the information and knowledge exchange process to achieve specific objectives.

Competencies: Upon graduation, it is increasingly important that a student with an MPH be able to…

F. 1.   Describe how the public health information infrastructure is used to collect, process, maintain, and disseminate data.

F. 2.   Describe how societal, organizational, and individual factors influence and are influenced by public health communications.

F. 3.   Discuss the influences of social, organizational and individual factors on the use of information technology by end users.

F. 4.   Apply theory and strategy-based communication principles across different settings and audiences.

F. 5.   Apply legal and ethical principles to the use of information technology and resources in public health settings.

F. 6.   Collaborate with communication and informatics specialists in the process of design, implementation, and evaluation of public health programs.

F. 7.   Demonstrate effective written and oral skills for communicating with different audiences in the context of professional public health activities.

F. 8.   Use information technology to access, evaluate, and interpret public health data.

F. 9.   Use informatics methods and resources as strategic tools to promote public health.

F. 10. Use informatics and communication methods to advocate for community public health programs and policies.

G. DIVERSITY AND CULTURE

The ability to interact with both diverse individuals and communities to produce
or impact an intended public health outcome.

Competencies: Upon graduation, it is increasingly important that a student with an MPH be able to…

G. 1.   Describe the roles of, history, power, privilege and structural inequality in producing health disparities.

G. 2.   Explain how professional ethics and practices relate to equity and accountability in diverse community settings.

G. 3.   Explain why cultural competence alone cannot address health disparity.

G. 4.   Discuss the importance and characteristics of a sustainable diverse public health workforce.

G. 5.   Use the basic concepts and skills involved in culturally appropriate community engagement and empowerment with diverse communities.

G. 6.   Apply the principles of community-based participatory research to improve health in diverse populations.

G. 7.   Differentiate among availability, acceptability, and accessibility of health care across diverse populations.

G. 8.   Differentiate between linguistic competence, cultural competency, and health literacy in public health practice.

G. 9.   Cite examples of situations where consideration of culture-specific needs resulted in a more effective modification or adaptation of a health intervention.

G. 10.   Develop public health programs and strategies responsive to the diverse cultural values and traditions of the communities being served.

H. LEADERSHIP

The ability to create and communicate a shared vision for a changing future; champion solutions to organizational and community challenges; and energize commitment to goals.

Competencies: Upon graduation, it is increasingly important that a student with an MPH be able to…

H. 1.   Describe the attributes of leadership in public health.

H. 2.   Describe alternative strategies for collaboration and partnership among organizations, focused on public health goals.

H. 3.   Articulate an achievable mission, set of core values, and vision.

H. 4.   Engage in dialogue and learning from others to advance public health goals.

H. 5.   Demonstrate team building, negotiation, and conflict management skills.

H. 6.   Demonstrate transparency, integrity, and honesty in all actions.

H. 7.   Use collaborative methods for achieving organizational and community health goals.

H. 8.   Apply social justice and human rights principles when addressing community needs.

H. 9.   Develop strategies to motivate others for collaborative problem solving, decision-making, and evaluation.

Interdisciplinary/Cross-cutting Competencies (continued)

I. PUBLIC HEALTH BIOLOGY

The ability to incorporate public health biology – the biological and molecular context of public health – into public health practice.

Competencies: Upon graduation, it is increasingly important that a student with an MPH be able to…

I. 1.   Specify the role of the immune system in population health.

I. 2.   Describe how behavior alters human biology.

I. 3.   Identify the ethical, social and legal issues implied by public health biology.

I. 4.   Explain the biological and molecular basis of public health.

I. 5.   Explain the role of biology in the ecological model of population-based health.

I. 6.   Explain how genetics and genomics affect disease processes and public health policy and practice.

I. 7.   Articulate how biological, chemical and physical agents affect human health.

I. 8.   Apply biological principles to development and implementation of disease prevention, control, or management programs.

I. 9.   Apply evidence-based biological and molecular concepts to inform public health laws, policies, and regulations.

I. 10.   Integrate general biological and molecular concepts into public health.

Public Health Biology Illustrative Sub-competencies are available at
http://www.asph.org/document.cfm?page=928.

J. PROFESSIONALISM

The ability to 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.

Competencies: Upon graduation, it is increasingly important that a student with an MPH be able to…

J. 1.   Discuss sentinel events in the history and development of the public health profession and their relevance for practice in the field.

J. 2.   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.

J. 3.   Apply evidence-based principles and the scientific knowledge base to critical evaluation and decision-making in public health.

J. 4.   Apply the core functions of assessment, policy development, and assurance in the analysis of public health problems and their solutions.

J. 5.   Promote high standards of personal and organizational integrity, compassion, honesty and respect for all people.

J. 6.   Analyze determinants of health and disease using an ecological framework.

J. 7.   Analyze the potential impacts of legal and regulatory environments on the conduct of ethical public health research and practice.

J. 8.   Distinguish between population and individual ethical considerations in relation to the benefits, costs, and burdens of public health programs.

J. 9.   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.

J. 10.   Appreciate the importance of working collaboratively with diverse communities and constituencies (e.g. researchers, practitioners, agencies and organizations).

J. 11.   Value commitment to lifelong learning and professional service including active participation in professional organizations.

Interdisciplinary/Cross-cutting Competencies (continued)

K. PROGRAM PLANNING

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

Competencies: Upon graduation, it is increasingly important that a student with an MPH be able to…

K. 1.   Describe how social, behavioral, environmental, and biological factors contribute to specific individual and community health outcomes.

K. 2.   Describe the tasks necessary to assure that program implementation occurs as intended.

K. 3.   Explain how the findings of a program evaluation can be used.

K. 4.   Explain the contribution of logic models in program development, implementation, and evaluation.

K. 5.   Differentiate among goals, measurable objectives, related activities, and expected outcomes for a public health program.

K. 6.   Differentiate the purposes of formative, process, and outcome evaluation.

K. 7.   Differentiate between qualitative and quantitative evaluation methods in relation to their strengths, limitations, and appropriate uses, and emphases on reliability and validity.

K. 8.   Prepare a program budget with justification.

K. 9.   In collaboration with others, prioritize individual, organizational, and community concerns and resources for public health programs.

K. 10.   Assess evaluation reports in relation to their quality, utility, and impact on public health.

Interdisciplinary/Cross-cutting Competencies (continued)

L. SYSTEMS THINKING

The ability to 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.

Competencies: Upon graduation, it is increasingly important that a student with an MPH be able to…

L. 1.   Identify characteristics of a system.

L. 2.   Identify unintended consequences produced by changes made to a public health system.

L. 3.   Provide examples of feedback loops and "stocks and flows" within a public health system.

L. 4.   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.

L. 5.   Explain how systems models can be tested and validated.

L. 6.   Explain how the contexts of gender, race, poverty, history, migration, and culture are important in the design of interventions within public health systems.

L. 7.   Illustrate how changes in public health systems (including input, processes, and output) can be measured.

L. 8.   Analyze inter-relationships among systems that influence the quality of life of people in their communities.

L. 9.   Analyze the effects of political, social and economic policies on public health systems at the local, state, national and international levels.

L. 10.   Analyze the impact of global trends and interdependencies on public health related problems and systems.

L. 11.   Assess strengths and weaknesses of applying the systems approach to public health problems.

More information about Systems Thinking is available at
http://www.asph.org/document.cfm?page=898

- Describes the policies and procedures for the ethical conduct of research.
- Describes public health informatics practices.
- Describes the dynamic forces that contribute to cultural diversity.
- Uses individual, team and organizational learning opportunities for personal and professional development.
- Identifies community assets and resources.
- Prepares proposals for funding from external sources.
- Describes how public health operates within a larger system.
- Participates with stakeholders in identifying key public health values and shared public health vision as guiding principles for action.

The following competencies should be selected for the student's particular area of elective course focus:

Biostatistics/Epidemiology
- Identifies gaps in data sources.
- Interprets demographic, statistical, programmatic, and scientific information for use by professional and lay audiences.
- Identifies data and information to improve organizational processes and performance.

Administration
- Incorporates data and information to improve organization processes and performance.
- Identifies internal and external problems that may affect the delivery of essential public health services.
- Develops a budget.

Health promotion/education
- Identifies potential linkages with key stakeholders that can contribute toward a public health issue.
- Conducts a review of scientific evidence related to a public health issue.
- Considers the role of cultural factors in the accessibility, availability, acceptability and delivery of public health services.

Environmental health
- Distinguishes the role of governmental and non-governmental organizations in the delivery of environmental health services.
- Identifies when to consult with experts in the field, such as toxicologists, epidemiologists, forensic specialists, environmental engineers, etc.
- Recommends solutions to environmental health problems that obtain "buy-in" from clients and increase their understanding of environmental health issues and concerns.

Other areas
- Identifies potential linkages with key stakeholders that can contribute toward a public health issue.
- Describe how data in [area of focus] are used to address scientific, political, ethical, or social public health issues.
- Recommend solutions in [area of focus] problems that obtain "buy-in" from clients and increase their understanding of pertinent issues and concerns.

References

- Public Health Foundation. Council on Linkages: Core Competencies for Public Health Professionals. Retrieved from http://www.phf.org/link/corecompetencies.htm. Accessed October 18, 2010.

- American Public Health Association. Environmental Health Competency Project: Draft Recommendations for Non-Technical Competencies at the Local Level. Retrieved from http://www.apha.org/APHA/CMS_Templates/GeneralArticle.aspx?NRMODE=Published&NRNODEGUID=%7b633F99D1-BE69-4020-B1CF-8A8DAA2C75CC%7d&NRORIGINALURL=%2fprograms%2fstandards%2fhealthcompproject%2fcorenontechnicalcompetencies%2ehtm&NRCACHEHINT=NoModifyGuest#assessment Accessed October 18, 2010.

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