

LSUHSC-NO School of Public Health Competencies

School-Wide Public Health Competencies for MPH Students

The Louisiana State University Health Sciences Center School of Public Health (LSUHSC SPH) has embraced a competency-based curriculum. The school's curriculum committee undertook a yearlong process to revise the MPH competencies to assure that our graduates attain the requisite knowledge and skills to engage successfully in public health practice in the 21st century. The MPH course learning objectives will be mapped against the new MPH competencies. This curriculum requires that all MPH students satisfy competency requirements in the five core public health areas Behavioral and Community Health Sciences, Biostatistics, Environmental and Occupational Health, Epidemiology and Health Policy and Systems Management (BCHS, BIOS, ENHS, EPID, HPSM) and in the areas of biologic basis of health and ethics. In addition to the school-wide required core competencies, students in each program area must also satisfy program specific MPH competencies. The process through which the competencies for the school and programs were achieved was one of collaboration, consensus and consultation. The school reviewed existing competency documents set forth by the Council on Linkages (COL) and the Association of Schools of Public Health (ASPH); recommendations by CEPH; and existing competencies at peer institutions. In addition, we sought consultation from individuals recognized as leaders in public health education, curriculum development and public health competencies. The LSUHSC SPH curriculum committee led the competency development for each degree with particular emphasis on the MPH degree. Initial drafts were circulated among faculty and students in early 2010 and then underwent outside peer review. The LSUHSC SPH faculty and students revised, finalized and formally adopted and will publish the final competencies in the 2010 student handbook.

The LSUHSC SPH ensures that all MPH students will achieve these competencies through successful completion of required MPH core and program courses. Furthermore, students will demonstrate successful application of the competencies through the practice experience and the culminating experience/capstone. As public health education evolves, we will continually re-evaluate and refine these competencies.

MPH Program Wide Core Competencies

Upon completion of the five core MPH courses and the biologic basis of health and the ethics courses, students should be able to:

- Examine social, developmental and behavioral theories of health, health behavior and illness, and their applicability to different types of health problems. (BCHS)
- Design social and behavioral change interventions based on these theories that are appropriate and responsive to the social and cultural context. (BCHS)
- Apply exploratory data analysis and descriptive statistics to summarize public health data. (BIOS)
- Apply common statistical methods for estimation and inference appropriately according to underlying assumptions and study design principles. (BIOS)

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- Examine public health problems in terms of magnitude, person, time and place, and calculate basic epidemiologic measures. (EPID)
- Propose valid and efficient epidemiologic studies to address public health problems, including understanding the strengths and limitations of descriptive, observational and experimental studies. (EPID)
- Appraise the human health effects, both acute and chronic, of major environmental and occupational hazards such as air pollution, metals, organic pollutants, microbial contamination of drinking water, and physical hazards. (ENHS)
- Assess the mechanisms and the degree to which environmental and occupational exposures impact public health and welfare. (ENHS)
- Examine the main components and policy issues regarding the organization, financing and delivery of health services and public health systems in the United States. (HPSM)
- Illustrate the principles of program planning, development, budgeting, management and evaluation in organizational and community initiatives. (HPSM)
- Apply biological principles toward the development and implementation of disease prevention, control, or management programs (BBH).
- Analyze issues of public health practice and policy based upon basic principles of ethics (e.g. the Public Health Code of Ethics, human rights framework, other moral theories). (Ethics)

Program Specific Competencies for the MPH Degree

In addition to the required school competencies students in each of the five concentration areas must also satisfy the following program specific competencies:

MPH in Behavioral and Community Health Sciences Program Competencies

- Prioritize individual, organizational and community concerns, assets, resources and deficits for social and behavioral science interventions and policy change.
- Design, implement and evaluate public health programs, policies and interventions.
- Analyze the role of individual, social and community factors in both the onset and solution of public health problems through intervention or policy change.
- Evaluate evidence-based approaches in the development and evaluation of social and behavioral science interventions, studies and programs.

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- Examine the cultural, social, and behavioral determinants of health and health disparities.
- Prepare approaches to health promotion issues that take into account cultural differences.

MPH in Biostatistics Program Competencies

- Examine the role that probability and statistical distributions play in inferential statistics and decision-making.
- Work with public health colleagues to translate research questions into testable hypotheses to advance public health.
- Prepare appropriate analytic approaches for public health research questions, use corresponding statistics method to test the null hypotheses, and draw conclusions based on the testing results.
- Construct hypothesis tests for comparing treatment strategies and exposure groups appropriate to the type of response measurement (e.g., binary, ordinal, continuous)
- Conduct power analysis and sample size calculations to aid in the planning of research studies.
- Assess assumptions, limitations, and (dis)advantages of commonly used statistical methods and describe preferred methodological alternatives when assumptions are not met.
- Manage computer software for acquisition, management and analysis of data and presentation of results.
- Create oral and written reports of the methods, results and interpretations of statistical analyses to both statisticians and non-statisticians.

MPH in Environmental and Occupational Health Sciences Program Competencies

- Collect, analyze, and interpret environmental and occupational health outcomes data.
- Examine the direct and indirect human, ecological, and safety effects of environmental and occupational exposures in order to protect the health of workers and the public.
- Evaluate biological, genetic, physiological, and psychological factors that affect human susceptibility to adverse health outcomes following exposures to environmental and occupational health hazards.
- Select appropriate human health risk assessment methods for a variety environmental and occupational data.

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- Recommend corrective strategies for mitigating and preventing environmental and occupational exposures that pose human health and safety risks.
- Exhibit knowledge of federal and state regulatory programs, guidelines, and authorities appropriate to environmental and occupational health and safety.
- Apply risk management and risk communication methodologies to address issues of environmental justice, equity, and policy.
- Propose environmental and occupational health promotion and injury prevention strategies for communities and workplaces.

MPH in Epidemiology Program Competencies

- Estimate advanced epidemiologic measures for descriptive and etiologic studies.
- Examine basic ethical and legal principles pertaining to the collection, maintenance, use and dissemination of epidemiologic data.
- Inspect the processes involved in the design, analysis and evaluation of an epidemiologic study.
- Appraise the direction and magnitude of bias on measures of association and draw appropriate inferences from epidemiologic data.
- Apply biological principles to development and implementation of disease prevention, control, or management programs.
- Identify the principles and limitations of public health screening programs.
- Employ statistical computer packages to calculate and display descriptive statistics.
- Analyze categorical data for case control and cohort studies and perform multiple logistic regression analysis and describe the essential elements of survival analysis.
- Examine data for confounding and effect modification, and handle appropriately.
- Evaluate the strengths and limitations of epidemiologic reports and be able to communicate epidemiologic information to lay and professional audiences.

MPH in Health Policy and Systems Management Program Competencies

- Apply quality and performance improvement concepts to address organizational and systems performance issues and use "systems thinking" for solving organizational problems.

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- Demonstrate leadership skills in public health and communicate health policy and management issues, using appropriate channels and technologies.
- Appraise the current issues in planning, resources allocation, and financing and their effects on consumers, providers, and payers in a health system.
- Analyze the impact of political, social, and economic policies on health systems at the local, state, national, and international levels and formulate solutions to key problems.
- Select evidence-based principles, law and ethics to critical evaluation and decision-making in health care delivery.
- Propose policy development, analysis, and evaluation processes for improving the health status of populations.